TX-SV828THX

Ref. No. 3527

ONKYO SERVICE MANUAL

AUDIO VIDEO CONTROL
TUNER AMPLIFIER
MODEL TX-SV828THX

Black model

BUD, BUDN	120V AC, 60Hz
BUP	230V AC, 50Hz
BUG	220V AC, 50Hz

SATETY-RELATED COMPONENT WARNING!!

COMPONENTS INDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.
MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

ONKYO®
AUDIO COMPONENTS

SPECIFICATIONS

AMPLIFIER SECTION

Power output: Stereo mode (BY-PASS mode, H.P.F.: OFF)
LEFT and RIGHT channels
100 watts per channel min RMS. at 8 ohms, both channels driven, from 20Hz to 20,000Hz, with no more than 0.03 % total harmonic distortion.
Continuous power 2 × 120 Watt at 8 ohms (DIN)
Surround mode
LEFT, RIGHT and CENTER channels
90 watts min. RMS. at 8 ohms 1,000Hz, with no more than 0.08% total harmonic distortion.
LEFT SURROUND and RIGHT SURROUND Channels
50 watts per channel min. RMS. at 8 ohms 1,000Hz with no more than 0.08% total harmonic distortion.

IM distortion: 0.03% at rated power (LEFT and RIGHT)
Damping factor: 70 at 8 ohms (LEFT and RIGHT)
Input sensitivity/impedance:
Phono: 2.5mV/50 kohms
Line (CD, TAPE 1 ~ 2, VIDEO 1 ~ 4): 200mV/50 kohms
Main in (LEFT, RIGHT, CENTER): 1V/50 kohms (100W output)
Main in (LEFT SURROUND, RIGHT SURROUND): 0.7V/50 kohms (50W output)
EXTERNAL DECODER INPUT (LEFT, RIGHT, CENTER, LEFT SURROUND, RIGHT SURROUND, SUBWOOFER): 200mV/50 kohms
Output level/impedance:
Rec out (TAPE 1 ~ 2): 200mV/2.2 kohms
Out (VIDEO 2 ~ 3): 200mV/2.2 kohms
Pre out (LEFT, CENTER, RIGHT, LEFT SURROUND, RIGHT SURROUND, SUBWOOFER): 1V/470 ohms
Pre out (MULTI SOURCE): 1V/470 ohms
Phono overload: 120mV RMS. at 1,000 Hz, 0.5 % THD.
Frequency response: 20 to 30,000 Hz, +/–0.5 dB (Tone defeat: on)
RIAA deviation: 20 to 20,000 Hz, +/–0.8 dB
Tone control: BASS: +/–10 dB at 100 Hz
TREBLE: +/–10 dB at 10,000 Hz
Signal-to-Noise ratio: PHONO: 80 dB (IHF A, 5mV input) (Surround mode: BY PASS)
CD/TAPE: 100 dB (IHF A)
Muting: –∞dB

VIDEO SECTION

Television format: NTSC (USA and Canadian models)
NTSC/PAL (Other area model)
Input sensitivity/impedance
IN (VIDEO 1 ~ 4) VIDEO (Composite): 1Vp-p/75 ohms
IN (VIDEO 1 ~ 4) S-VIDEO (Y signal): 1Vp-p/75 ohms
IN (VIDEO 1 ~ 4) S-VIDEO (C signal): 0.28Vp-p/75 ohms
Output level/impedance
OUT (VIDEO 2 ~ 3, MONITOR OUT) VIDEO (Composite): 1Vp-p/75 ohms
OUT (VIDEO 2 ~ 3, MONITOR OUT) S-VIDEO (Y signal): 1Vp-p/75 ohms
OUT (VIDEO 2 ~ 3, MONITOR OUT)

TUNER SECTION

FM:

Tuning range: 87.50 – 108.00 MHz (50 kHz steps)
Usable sensitivity: Mono: 11.2 dBf, 1.0 µV (75 ohms)
Stereo: 17.2 dBf, 2.0 µV (75 ohms)
50 dB quieting sensitivity: Mono: 17.2 dBf, 2.0 µV (75 ohms)
Stereo: 37.2 dBf, 20 µV (75 ohms)
Capture ratio: 1.5 dB
Image rejection ratio: 40 dB (USA and Canadian models)
85 dB (European model)
IF rejection ratio: 90 dB
Signal-to-Noise ratio: Mono: 76 dB
Stereo: 70 dB
Alternate channel Attenuation: 55 dB
AM suppression ratio: 50 dB
Harmonic distortion: Mono: 0.1%
Stereo: 0.2%
Frequency response: 30 – 15,000 Hz ± 1.0 dB
Stereo separation: 45 dB at 1kHz
30 dB at 100 – 10,000 Hz
Muting level: 17.2 dBf

AM:

Tuning: USA and Canadian models
530 – 1710 kHz (10 kHz steps)
European models
522 – 1611 kHz (9 kHz steps)
Worldwide model
530 – 1710 kHz (10 kHz steps) or
531 – 1602 kHz (9 kHz steps)
Usable sensitivity: 30 µV
Image rejection ratio: 40 dB
IF rejection ratio: 40 dB
Signal-to-Noise ratio: 40 dB
Harmonic distortion: 0.7%

GENERAL

Power supply: USA and Canadian models
AC120V, 60 Hz
European models
AC 230V,50 Hz
Dimensions (W x H x D): 455 × 170 × 389 mm (17-15/16″ × 6-15/16″ × 15-5/16″)
Mass: 15 kg (33 lbs.)

REMOTE CONTROL RC-307M

Transmitter: Infrared
Signal range: Approx. 5 meters (16ft.)
Power supply: four "AAA" batteries (1.5V × 4)

Specifications and features are subject to change without notice.

SERVICE PROCEDURES

1. Replacing the fuses

This symbol located near the fuse indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating refer to the marking adjacent to the symbol.

Ce symbole indique que le fusible utlise est a rapide. Pour une protection permanente, n'utiliser que des fusibles de meme type. Ce darnier est indique la qu le present symbol est appose.

MARK	REF. NO.	PART NO.	DESCRIPTION
D ⚠	F901	252154	8A-TSC, Primary fuse
P ⚠	F902	252077	4A-SE-EAK, Primary fuse
P ⚠	F903	252075	2.5A-SE-EAK, AC outlet fuse
D ⚠	F915,F916	252153	6.3A-TSC, Secondary fuse
P ⚠	F915,F916	252079	6.3A-SE-EAK, Secondary fuse

NOTE: <D> :120V model only
<P> :230V model only

2. To Initialize the unit

This device employs a microprocessor to perform various functions and operations. If interference generated by an external power supply, radio wave, or other electrical source results in accident which causes the specified operations and functions to operate abnormally.

To perform a result, please follow the procedure below.

1. Press and hold down the VIDEO-1 button, then press the POWER button.
2. After "clear" is displayed, the preset memory and each mode stored in the memory, such as surround, are initialized and will return to the factory settings.

3. Safety-check out

(Only U.S.A. model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer.

Connect the insulating-resistance tester between the plug of power supply cord and the screw on the back panel.

Specifications: 3.3 Mohm±10% at 500V.

4. Memory preservation

This unit does not require memory preservation batteries.

A built-in memory power back-up system preserves contents of the memory during power failures and even when the unit is unplugged.

The unit must be plugged in and the power switch turned on and off once in order to charge the back-up system. Note that since this is not a permanent memory, the power switch must be turned on and off a few times each month the keep the back-up system operative.

The period of the time during which memory contents are preserved after power has last been turned off varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of 3 to 4 weeks (a minimum of 2 weeks) after the last time power has been turned off. This period is shorted when the unit is exposed to very high humidity or used in an area with an extremely humid climate.

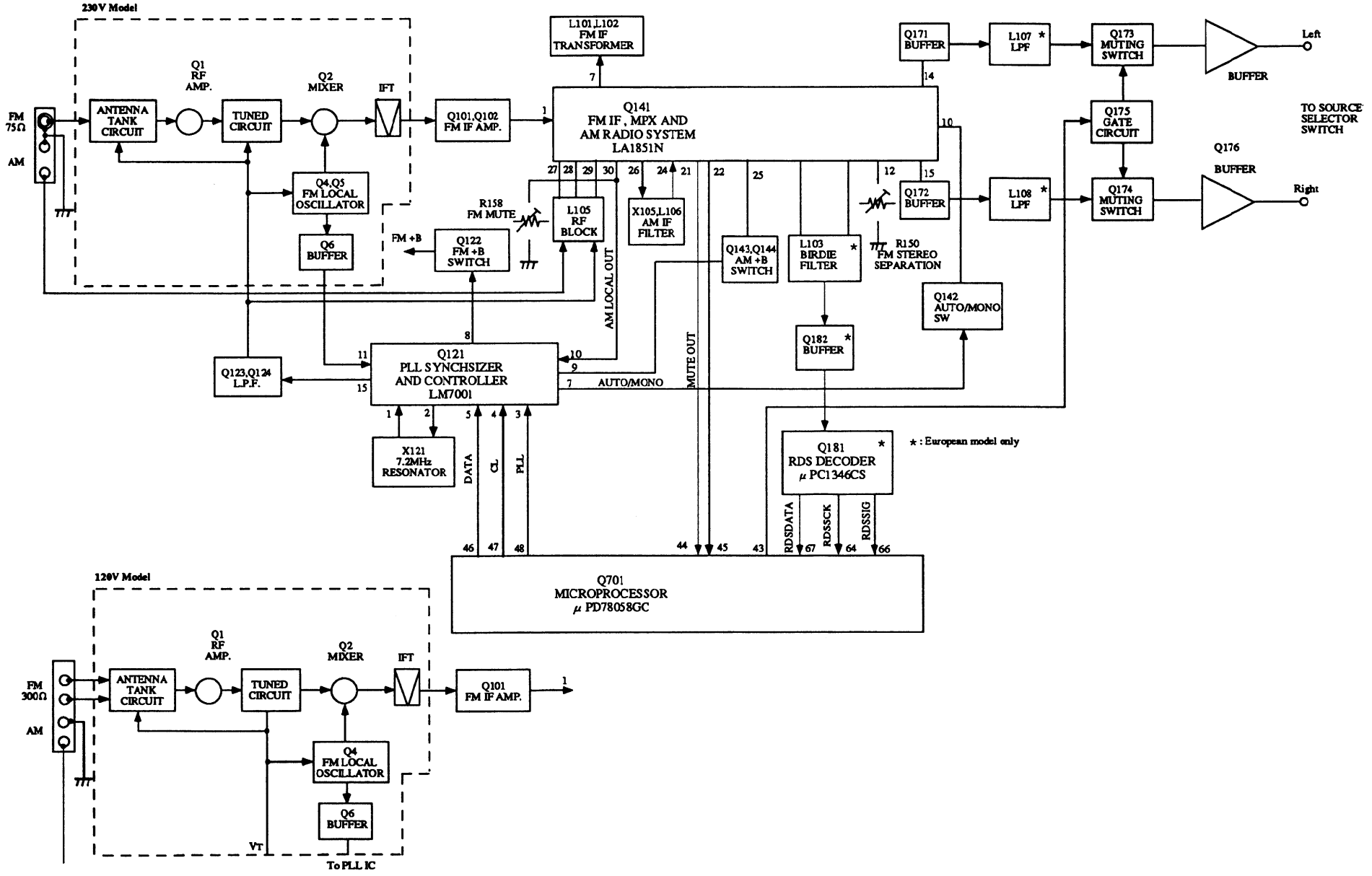
5. Changing the band step

With the exception of the worldwide models, a tuning step selector switch is not provided. When you change the band step, change the parts as shown below.

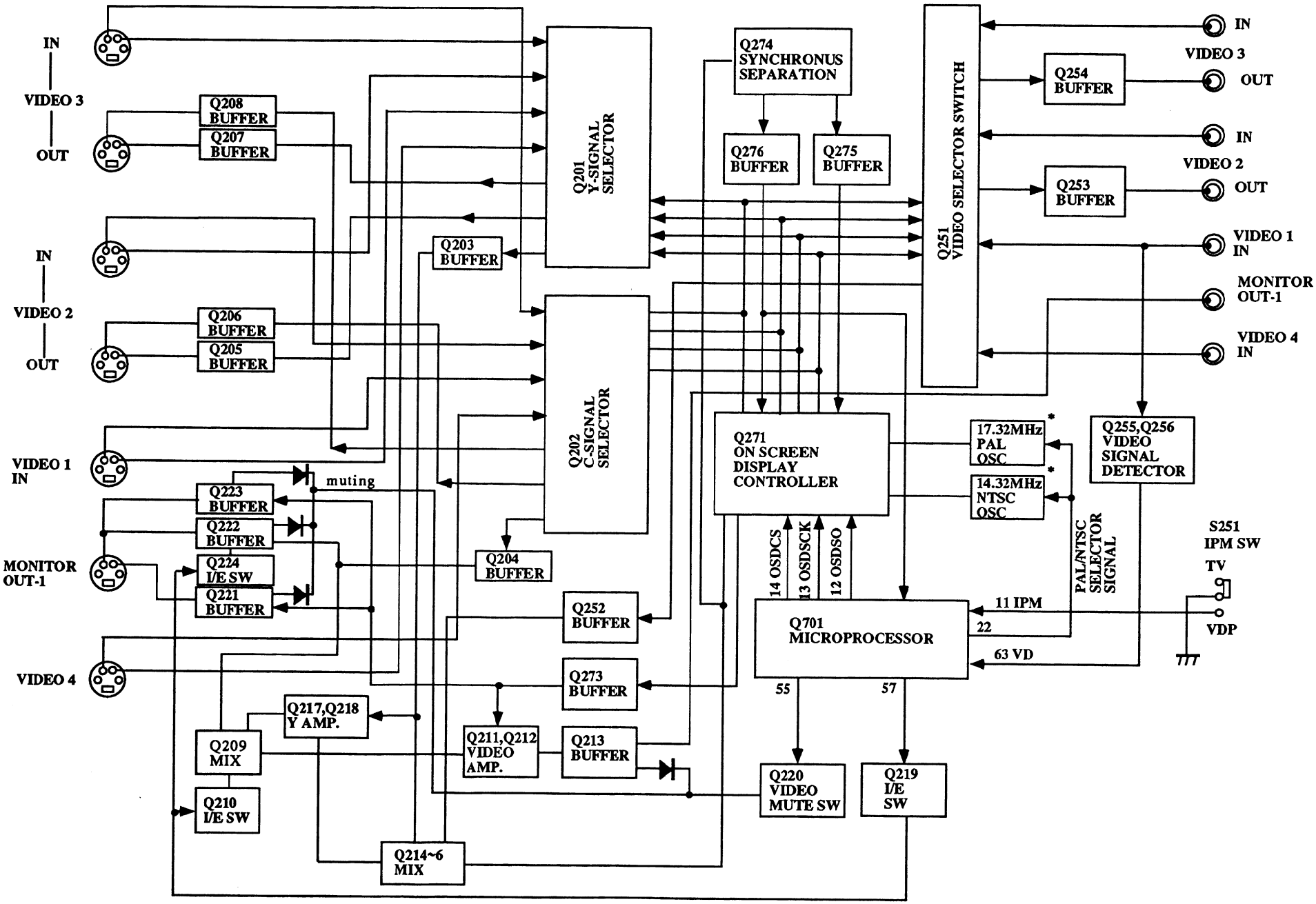
	To 10 kHz	To 9 kHz
R705	open	10 kohm

BLOCK DIAGRAM

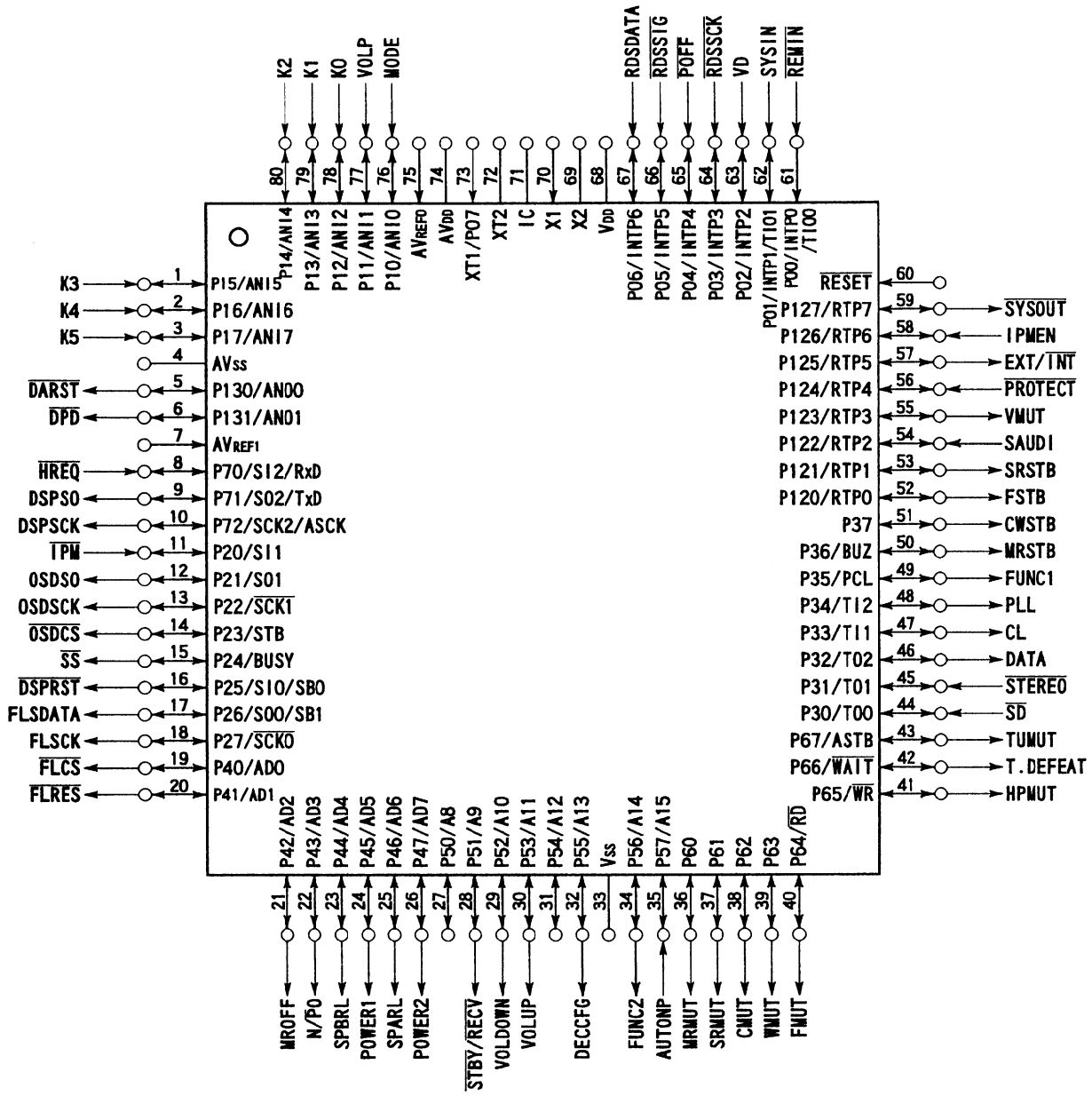
TUNER SECTION



VIDEO SECTION



MICROPROCESSOR-CONNECTION DIAGRAM



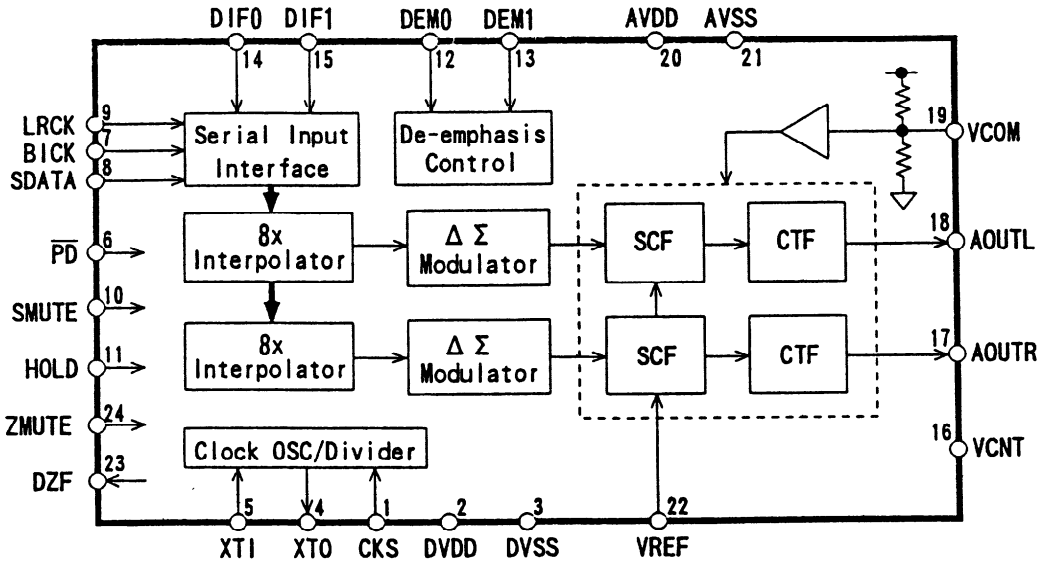
MICROPROCESSOR TERMINAL DESCRIPTION

Pin No.	Terminal	I/O	Description
1	K3	I	Operation key connection terminal
2	K4	I	Operation key connection terminal
3	K5	I	Operation key connection terminal
4	AVss		Ground terminal for AD conveter
5	$\overline{\text{DARST}}$	O	Reset signal output terminal for DA converter
6	$\overline{\text{DPD}}$	O	Power source control output terminal for digital section
7	AVREF1		Reference voltage terminal for DA converter
8	$\overline{\text{HREQ}}$	I	Connect to the terminal HREQ of DSP IC Q811.
9	DSPSO	O	Data output termianl for DSP IC.
10	DSPSCK	O	Clock output. Connect to the terminal SCK/SCL of DSP IC.
11	$\overline{\text{IPM}}$	I	Video 1 signal input terminal
12	OSDSO	O	Serial data output terminal for on-screen display control IC.
13	OSDSCK	O	Clock output terminal for on-screen display control IC.
14	$\overline{\text{OSDCS}}$	O	Chip selector output terminal for on-screen display control IC.
15	$\overline{\text{SS}}$	O	Connect to the terminal SS of DSP IC.
16	$\overline{\text{DSPRST}}$	O	Connect to the terminal DSP of DSP IC.
17	FLSDATA	O	Data output terminal for FL tube drive IC.
18	FLSCK	O	Clock output terminal for FL tube drive IC.
19	$\overline{\text{FLCS}}$	O	Chip select output terminal for FL tube drive IC.
20	$\overline{\text{FLRES}}$	O	Reset output terminal for FL tube drive IC.
21	MROFF	O	MR control output terminal
22	N/P0	O	NTSC/PAL selector output terminal
23	SPBRL	O	Speaker relay B control output terminal
24	POWER1	O	Power switch relay control output terminal
25	SPARL	O	Speaker relay A control output terminal
26	POWER2	O	B+ switch output terminal for power amplifier
27	NC		
28	$\overline{\text{STBY/RECV}}$	O	Stand-by and Receiving indicator output terminal
29	VOLDOWN	O	Volume control output terminal
30	VOLUP	O	Volume control output terminal
31	NC		
32	DECCFG	O	AC-3 control output terminal
33	Vss		Ground terminal
34	FUNC2	O	Connect to the terminal FUNC of surround selector IC Q1340.
35	AUTONP	I	NTSC/PAL selector terminal for on-screen display.
36	MRMUT	O	Muting control output terminal for multi room signal
37	SRMUT	O	Muting control output terminal for surround channel amplifier
38	CMUT	O	Muting control output terminal for center channel amplifier
39	WMUT	O	Muting control output terminal for sub woofer
40	FMUT	O	Muting control output terminal for front channel amplifier

Pin No.	Terminal	I/O	Description
41	HPMUT	O	Not used.
42	T.DEFEAT	O	Not used.
43	TUMUT	O	Muting control output terminal for tuner section
44	SD	I	Broadcast detection input terminal more than muting level
45	$\overline{\text{STEREO}}$	I	FM stereo broadcast detection input terminal
46	DATA	O	Data output terminal for PLL IC, selector IC and electro volume IC.
47	CL	O	Clock output terminal for PLL IC, selector IC and electro volume IC.
48	PLL	O	Connect to the terminal PLL of PLL IC Q121.
49	FUNC1	O	Connect to the terminal FUNC of selector IC and electro volume IC.
50	MRSTB	O	Connect to the terminal STB of electro volume Q1408.
51	CWSTB	O	Connect to the terminal STB of electro volume Q1406.
52	FSTB	O	Connect to the terminal STB of electro volume Q1405.
53	SRSTB	O	Connect to the terminal STB of electro volume Q1407.
54	SAUDI	I	Band region selector input terminal
55	VMUT	O	Muting control output terminal for video section
56	$\overline{\text{PROTECT}}$	I	Detection input terminal for protection circuit
57	EXT/$\overline{\text{INT}}$	O	External/Internal selector output terminal
58	IPMEN	I	Input terminal for TV/DDP selector switch.
59	$\overline{\text{SYSOUT}}$	O	System code output terminal
60	RESET	I	System reset input terminal
61	$\overline{\text{REMIN}}$	I	Remote control signal input terminal
62	SYSIN	I	System code input terminal
63	VD	I	Video signal detection input pin
64	$\overline{\text{RDSSCK}}$	I	Clock input terminal from RDS decoder μ PD1346CS.
65	$\overline{\text{POFF}}$	I	Power stoppage detection input terminal
66	$\overline{\text{RDSSIG}}$	I	Signal input terminal from RDS decoder μ PD1346CS.
67	RDSDATA	I	Data input terminal from RDS decoder μ PD1346CS.
68	VDD		Power supply terminal (+5V)
69	X2		Ceramic resonator connection terminals for main system
70	X1		Connect the ceramic resonator 5.0MHz.
71	IC		Internal connection terminal.
72	XT2		Crystal connection terminal for sub-system
73	XT1		Crystal connection terminal for sub-system
74	AVDD		Power supply terminal for A/D converter
75	AVREF0		Reference voltage input terminal for A/D converter
76	MODE	I	Initializing input terminal of operation mode
77	VOLP	I	Volume position detection input terminal
78	K0	I	Operation key connection terminal
79	K1	I	Operation key connection terminal
80	K2	I	Operation key connection terminal

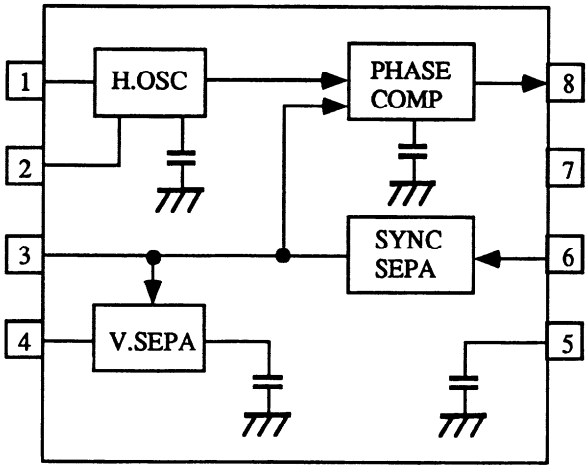
IC BLOCK DIAGRAMS AND DESCRIPTIONS

AK4320-VM (DA Converter)



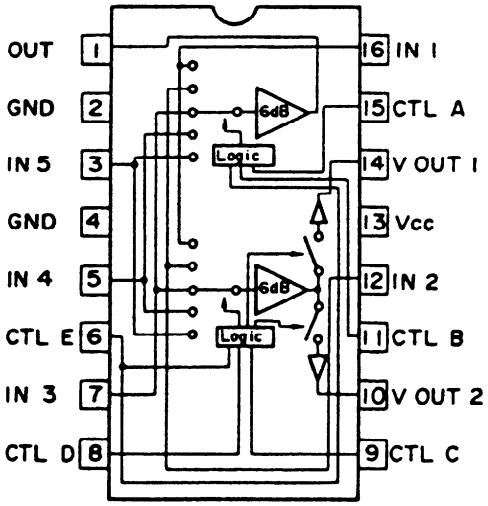
Pin No.	Terminal	I/O	Description	Pin No.	Terminal	I/O	Description
1	CKS	I	Clock select pin	13	DEM1	I	De-emphasis mode pin
2	DVDD		Power supply pin for digital section	14	DIF0	I	Input format pin
3	DVSS		Ground pin for digital section	15	DIF1	I	Input format pin
4	XTO	O	Crystal resonator connection pin	16	VCNT	O	Muting voltage control pin
5	XTI	I	Clock input pin	17	AOUTR	O	Analog signal pin for right channel
6	$\overline{PD}$	I	Power down pin	18	AOUTL	O	Analog signal pin for left channel
7	BICK	I	Serial bit clock pion	19	ACOM	O	Comman voltage pin
8	SDATA	I	Serial data input pin	20	AVDD		Power supply pin for analog section
9	LRCK	I	L/R clock pin	21	AVSS		Ground pin for analog section
10	SMUTE	I	Soft muting pin	22	VREF	I	Reference voltage input pin
11	HOLD	I	Soft muting hold pin	23	DZF	O	Zero input detector pin
12	DEM0	I	De-emphasis mode pin	24	ZMUTE	I	Zero muting pin

BA7046 (Synchronous Separation)



Pin No.	Function
1	Horizontal resonator resistor terminal
2	HD output terminal
3	Synchronizing output terminal
4	VD output terminal
5	Ground terminal
6	Video input terminal
7	Power source terminal
8	Phase comparator output terminal

BA7625 (Video Selector)



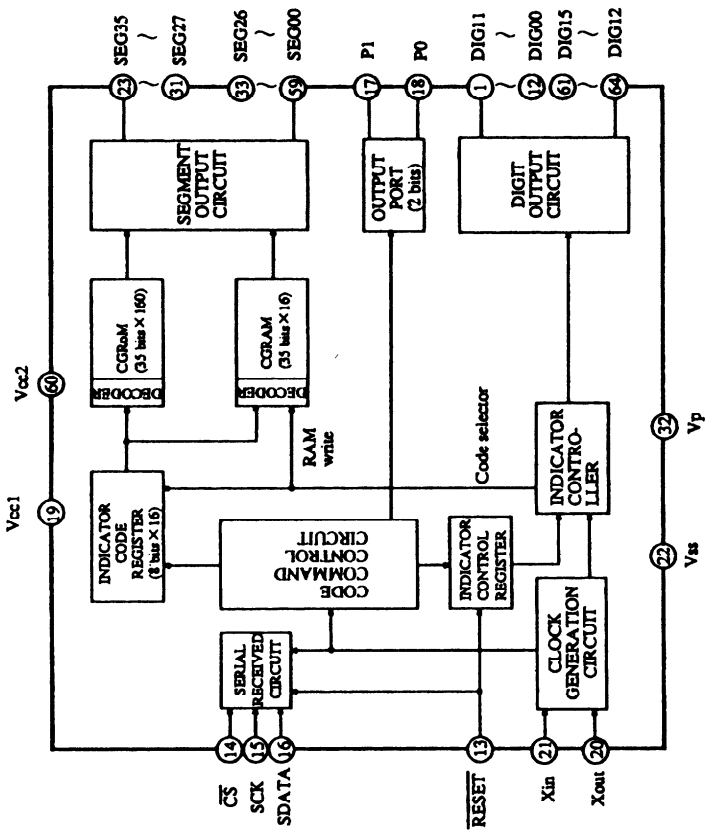
#15	#11	#6	#1
A	B	E	MONITOR OUT
L	L	X	IN1
H	L	X	IN2
L	H	X	IN3
H	H	L	IN4
H	H	H	IN5

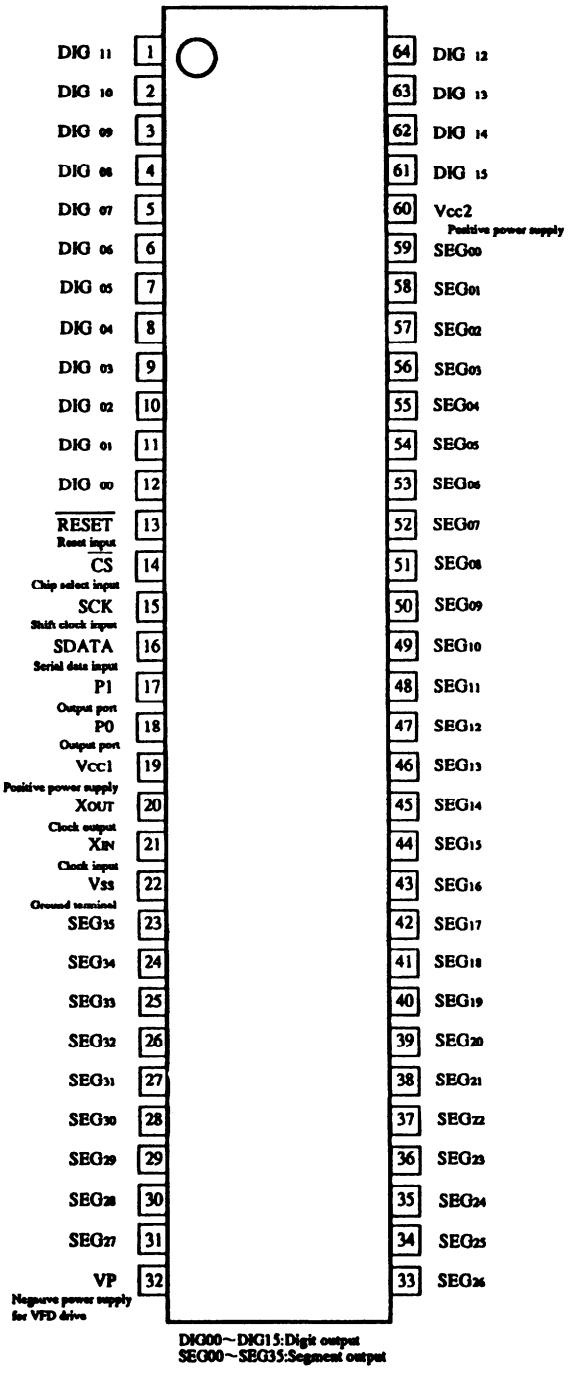
X:Don't care

#9	#8	#6	#14
C	D	E	VOUT 1
L	L	X	
H	L	X	IN2
L	H	X	IN3
H	H	L	IN4
H	H	H	IN5

#15	#11	#6	#10
A	B	E	VOUT 2
L	L	X	IN1
H	L	X	
L	H	X	IN3
H	H	L	IN4
H	H	H	IN5

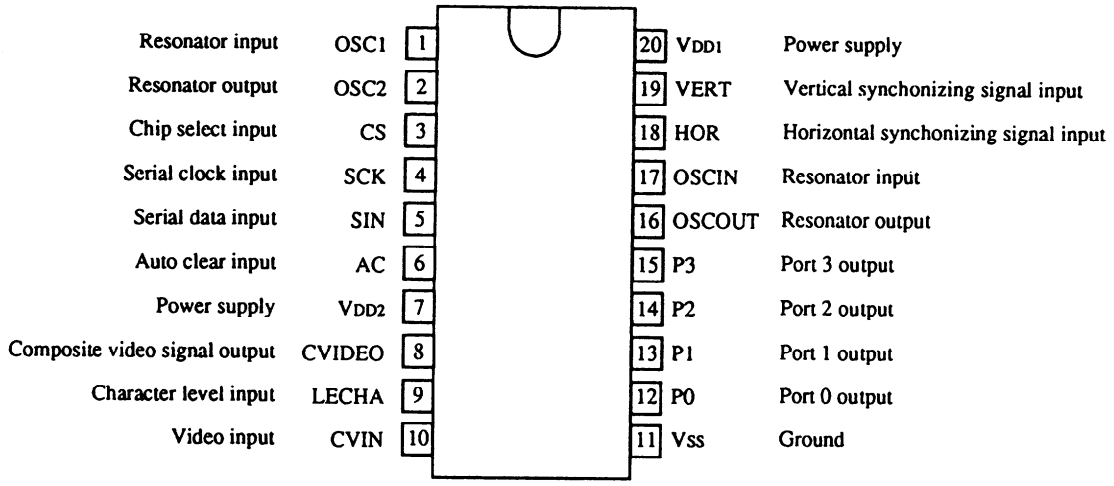
M66004FP (FL Tube Driver)

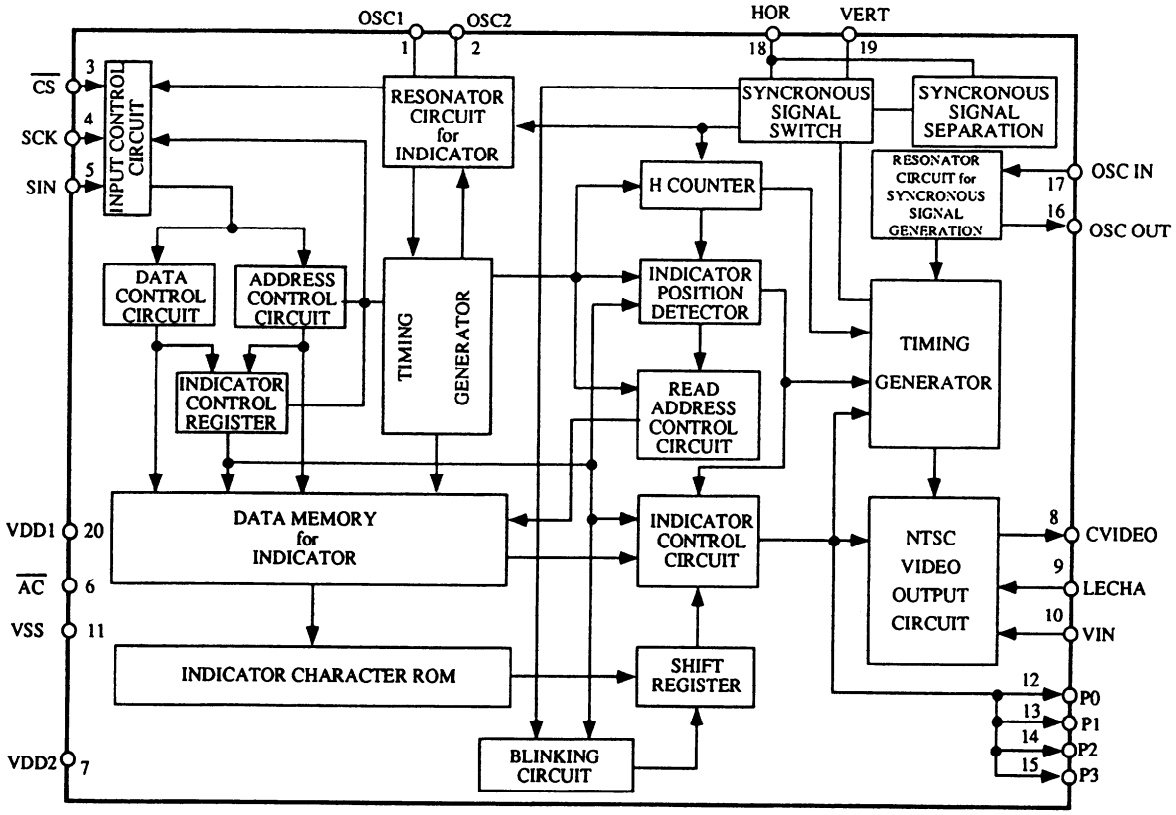




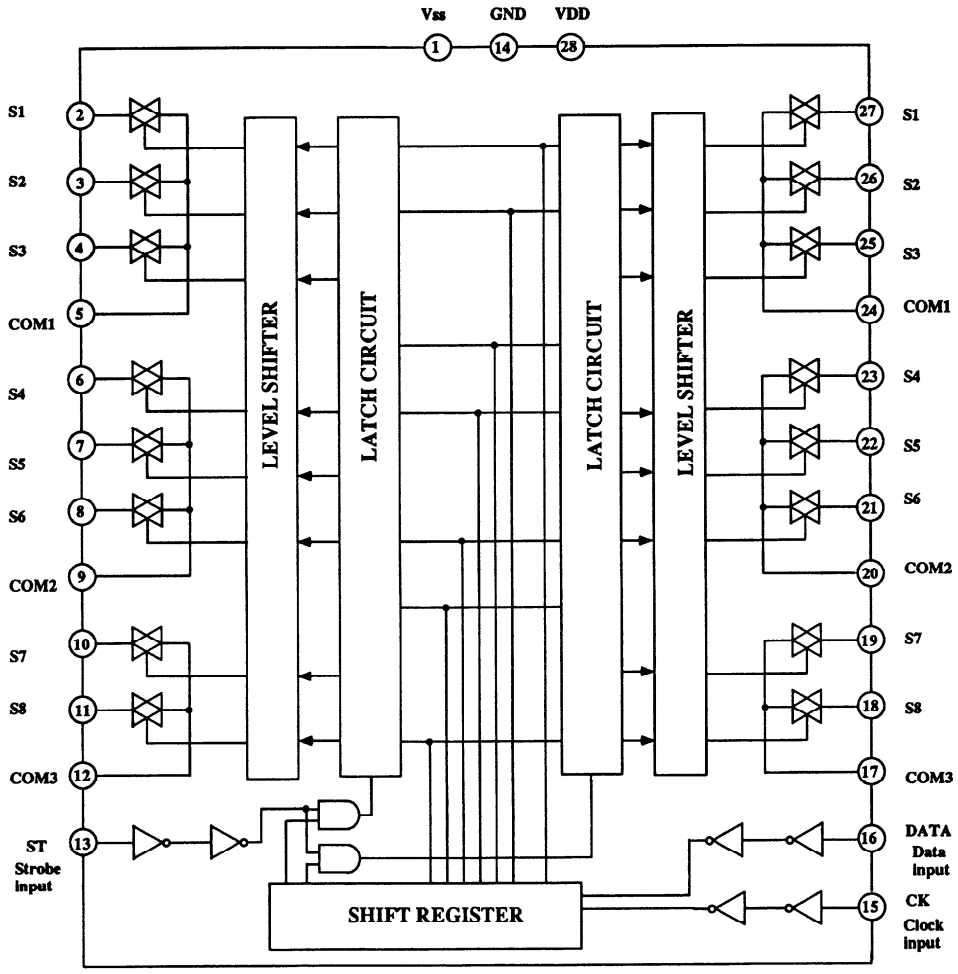
DIG00~DIG15:Digit output
SEG00~SEG35:Segment output

M35010-084SP (ON Screen Display Controller)

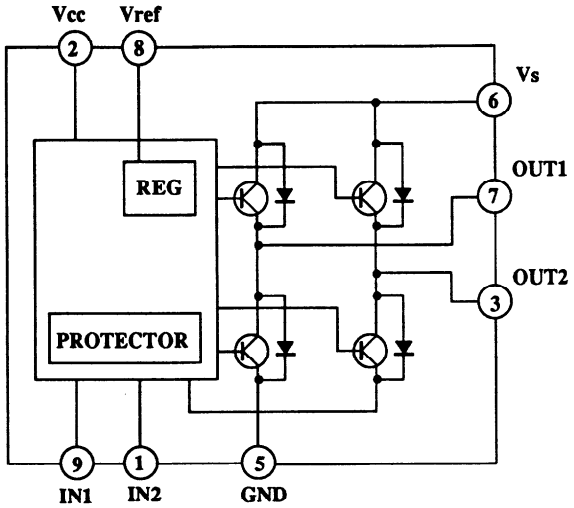




TC9163AF (Analog Switch)



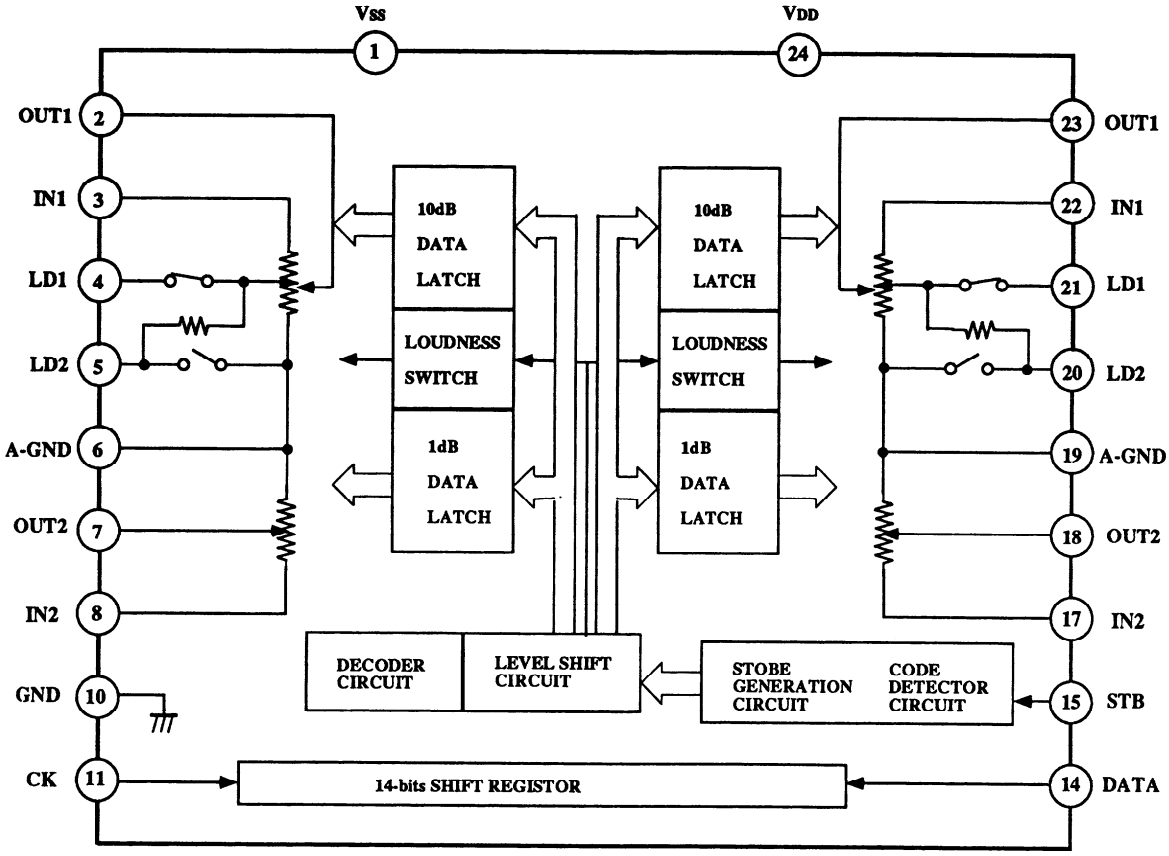
TA7291 (Volume Motor Control)



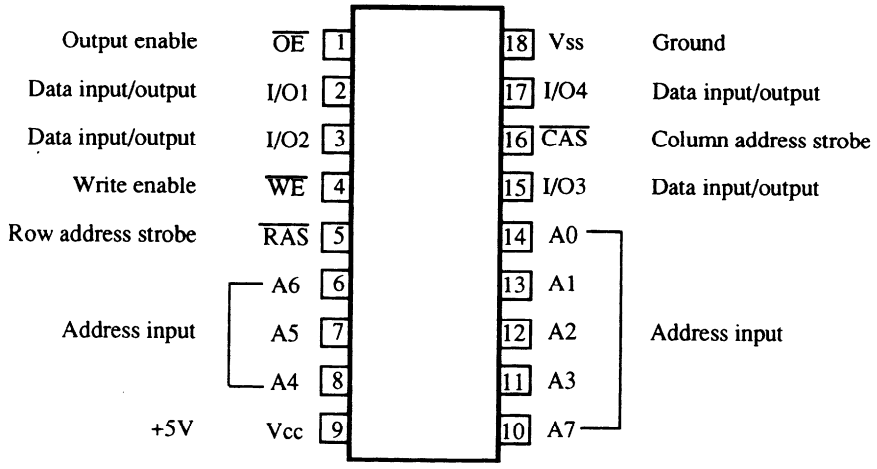
INPUT		OUTPUT		
IN1	IN2	OUT1	OUT2	MODE
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

CCW:Counter clockwise direction
CW:Clockwise direction

TC9212F (Electro Volume)



LC32464-80 / LH2464-10 (D RAM)

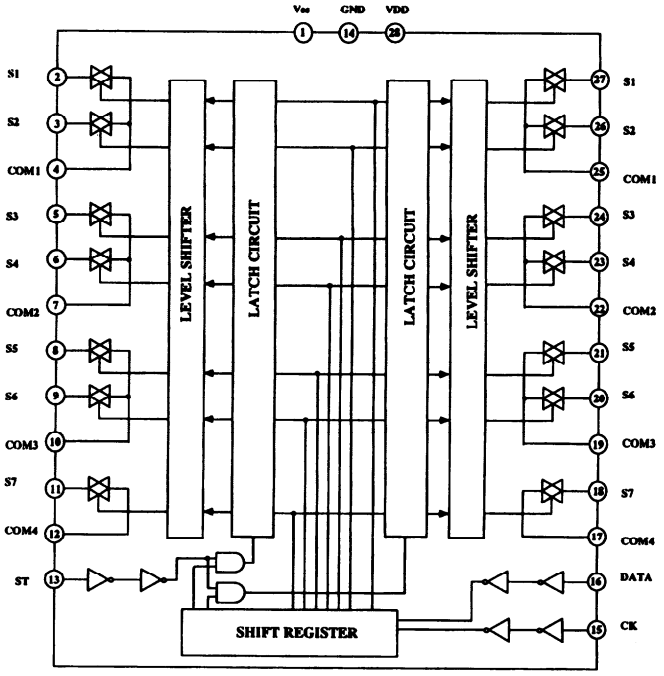


XC56004FJ66 (DSP)

Pin No.	Terminal	I/O	Description
41	MOSI/HA0	I/O	SPI Master-Out-Slave-In/I2C Slave Address 0
42	$\overline{SS}$/HA2	I	SPI Slave Select/I2C Slave Address 2
43	$\overline{HREQ}$	I/O	Host Request
44	SGND		SAI, SHI & ONCE output buffer ground pin
45	SDO2	O	Serial Output Data 2
46	SDO1	O	Serial Output Data 1
47	SDO0	O	Serial Output Data 0
48	SVCC		SAI, SHI & ONCE output buffer power supply pin
49	SCKT	I/O	Transmit Serial Clock
50	WST	I/O	Transmit word Selector
51	SCKR	I/O	Receive Serial Clock
52	QGND		Internal Logic ground pin
53	QVCC		Internal Logic power supply pin
54	SGND		SAI, SHI & ONCE output buffer ground pin
55	WSR	I/O	Receive Word Select
56	SDI1	I	Serial data Input 1
57	SDI0	I	Serial data Input 0
58	DSO	O	Debug Serial Output
59	DSI/OS0	I/O	Debug Serial Input/Chip Status 0
60	DSCK/OS1	I/O	Debug Serial Clock/Chip Status 1
61	DR	I	Debug Request Input
62	MD7	I/O	These pins provide the data bus for EMI accesses.They are inputs during reads
63	MD6	I/O	from external memory, outputs during writes to external memory and are three-stated
64	MD5	I/O	if no external access is taking place.
65	MD4	I/O	
66	DGND		EMI data bus & GPIO output ground pin
67	MD3	I/O	These pins provide the data bus for EMI accesses.They are inputs during reads
68	MD2	I/O	from external memory, outputs during writes to external memory and are three-stated
69	MD1	I/O	if no external access is taking place.
70	DVCC		EMI data bus & GPIO output power supply pin
71	MD0	I/O	This pin provides the data bus for EMI accesses.
72	DGND		EMI data bus & GPIO output ground pin
73	GPIO3	I/O	General Purpose Input/Output
74	GPIO2	I/O	General Purpose Input/Output
75	GPIO1	I/O	General Purpose Input/Output
76	GPIO0	I/O	General Purpose Input/Output
77	$\overline{MRD}$	O	Data Read Strobe:This output is asserted when reading external memory.
78	$\overline{MWR}$	O	Data Write Strobe:This output is asserted when writing to external memory.
79	MA17/$\overline{MRAS}$	O	This output operates as the non-multiplexed address line 17 or as Chip Select 1 for SRAm accesses.
80	MA16/$\overline{MCAS}$	O	This output operates as the non-multiplexed address line 16 or as Chip Select 2 for SRAm accesses.

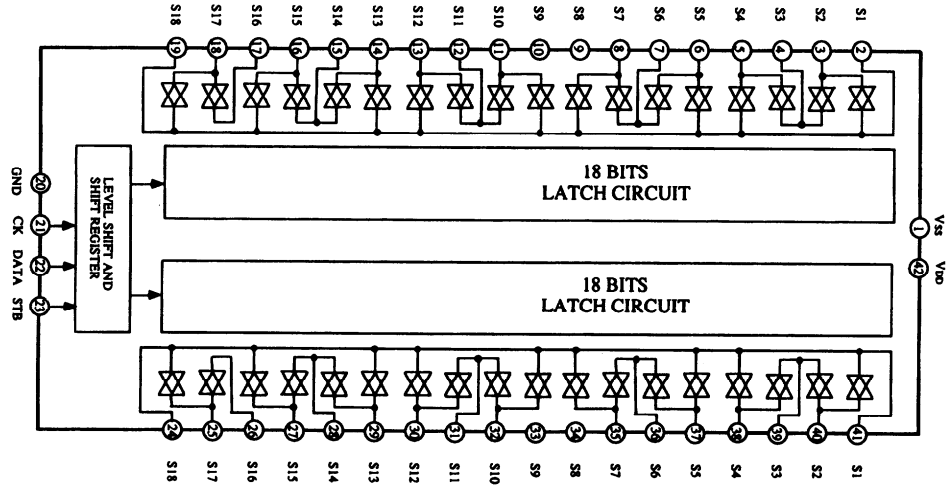
Pin No.	Terminal	I/O	Description
1	AGND		EMI control output buffers ground pin
2	$\overline{MCS0}$	O	This output is Chip Select 0 for SRAM accesses.
3	MA15/$\overline{MCS3}$	O	This output operates as the non-multiplexed address line 15 or as Chip select 3 for SRAM accesses.
4	MA14	O	This pin provides the multiplexed row/column address for DRAM access.
5	MA13	O	This pin provides the multiplexed row/column address for DRAM access.
6	AVCC		EMI address/control output buffers power supply pin
7	MA12	O	This pin provides the multiplexed row/column address for DRAM access.
8	AGND		EMI address output buffer ground pin
9	QVCC		Internal Logic power supply pin
10	QGND		Internal Logic ground pin
11	MA11	O	This pin provides the multiplexed row/column address for DRAM access.
12	MA10	O	This pin provides the multiplexed row/column address for DRAM access.
13	MA9	O	This pin provides the multiplexed row/column address for DRAM access.
14	MA8	O	This pin provides the multiplexed row/column address for DRAM access.
15	AGND		EMI address output buffer ground pin
16	MA7	O	This pin provides the multiplexed row/column address for DRAM access.
17	AVCC		EMI address/control output buffers power supply pin
18	MA6	O	This pin provides the multiplexed row/column address for DRAM access.
19	MA5	O	This pin provides the multiplexed row/column address for DRAM access.
20	MA4	O	This pin provides the multiplexed row/column address for DRAM access.
21	AGND		EMI address output buffer ground pin
22	MA3	O	This pin provides the multiplexed row/column address for DRAM access.
23	MA2	O	This pin provides the multiplexed row/column address for DRAM access.
24	MA1	O	This pin provides the multiplexed row/column address for DRAM access.
25	MA0	O	This pin provides the multiplexed row/column address for DRAM access.
26	SCK/SCL	I/O	SPI Serial Clock/I2C Serial Clock
27	EXTAL	I	This input should be connect to an external clock source.
28	QVCC		Internal Logic power supply pin
29	QGND		Internal Logic ground pin
30	PINIT	I	PLL Initialization pin
31	PGND		GND dedicated to the analog PLL circuits
32	PCAP	I	Off-clip capacitor for PLL filter
33	PVCC		Vcc dedicated to the analog PLL circuits(PVCC)
34	SGND		SAI, SHI & ONCE output buffer ground pin
35	MISO/SDA	I/O	SPI Master-In-Slave-Out/I2C Data and Acknowledge
36	$\overline{RESET}$	I	This Schmitt trigger input is a direct hardware reset of the processor.
37	MODA/$\overline{IRQA}$	I	Mode Selector A/External Interrupt Request A/Stop Recovery
38	MODB/$\overline{IRQB}$	I	Mode Select B/External Interrupt Request B
39	MODC/$\overline{NMI}$	I	Mode Select C/Non-Maskable Interrupt Request
40	SVCC		SAI, SHI & ONCE output buffer power supply pin

TC9274N-008 (Analog Switch)

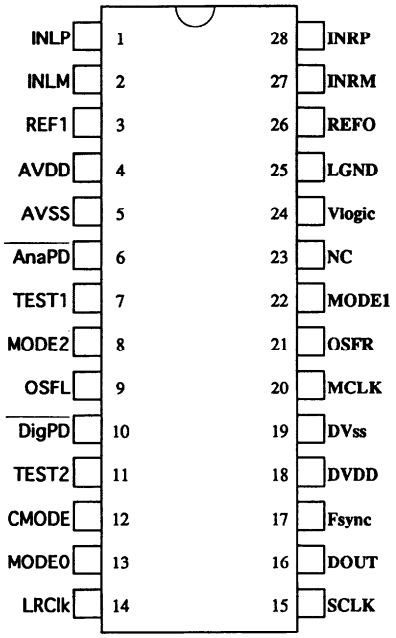


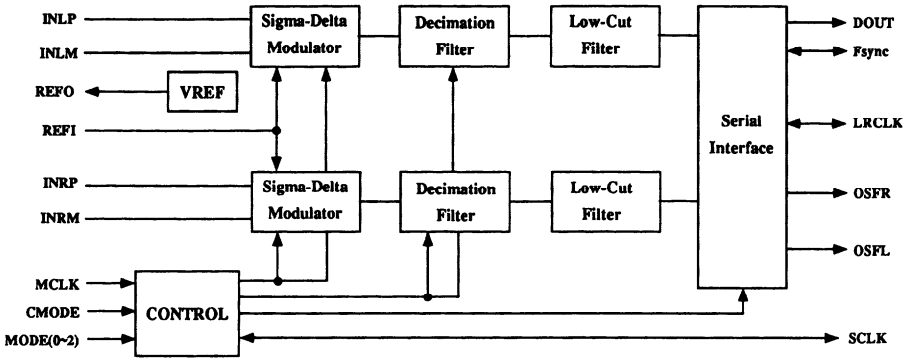
Pin No.	Symbol	Function
1	Vss	Power supply pin (-)
14	GND	Ground pin
28	VDD	Power supply pin (+)
2,3,5,6,8,9,11	S1～S7	Switch input/output pins
27,26,24,23,21,20,18	S1～S7	Switch input/output pins
4,7,10,12	COM1～COM4	Common pins
25,22,19,17	COM1～COM4	Common pins
13	ST	Strobe input pin for data interruption
15	CK	Clock input for data transfer
16	DATA	Serial data input pin for switch setting

TC9162AN (Analog Switch)

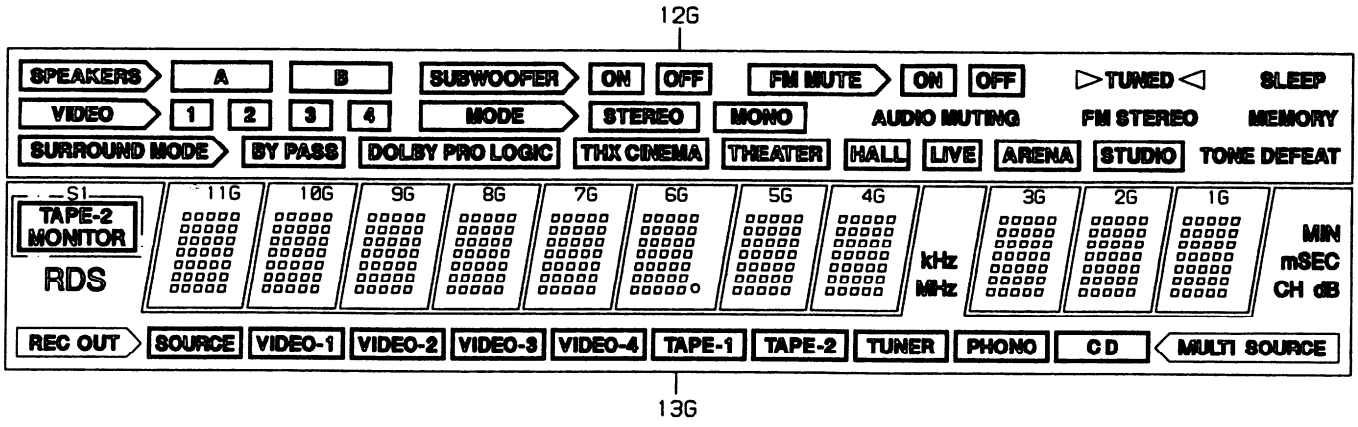


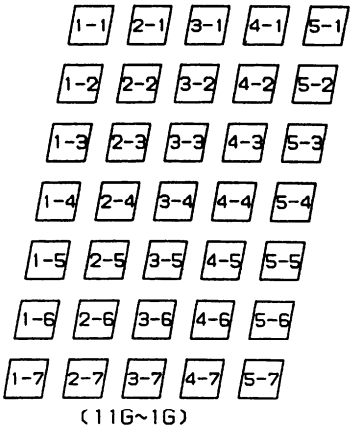
TLC320AD58C (AD Converter)





13BT-141GK (FL Tube)





64	63	62	61	60	59	58	57
F2	F2	NP	NP	P36	P35	P34	P33
56	55	54	53	52	51	50	49
P32	P31	P30	P29	P28	P27	P26	P25
48	47	46	45	44	43	42	41
P24	P23	P22	P21	P20	P19	P18	P17
40	39	38	37	36	35	34	33
P16	P15	P14	P13	P12	P11	P10	P9
32	31	30	29	28	27	26	25
P8	P7	P6	P5	P4	P3	P2	P1
24	23	22	21	20	19	18	17
NC	NC	NC	NC	NC	NC	NC	13G
16	15	14	13	12	11	10	9
12G	11G	10G	9G	8G	7G	6G	5G
8	7	6	5	4	3	2	1
4G	3G	2G	1G	NP	NP	F1	F1

F1,F2:Filament

NP: No pin

NC: No connection

1G~13G: Grid

ANODE CONNECTION

	13G	12G	11G~7G	6G	5G~1G
P1	MIN	SLEEP	1-1	1-1	1-1
P2	mSEC	MEMORY	2-1	2-1	2-1
P3	dB	AUDIO MUTING	3-1	3-1	3-1
P4	CH	TONE DEFEAT	4-1	4-1	4-1
P5	MULTI SOURCE	-	5-1	5-1	5-1
P6	REC OUT	TUNED	1-2	1-2	1-2
P7	SOURCE	▷ ◁	2-2	2-2	2-2
P8	(SOURCE)	FM STEREO	3-2	3-2	3-2
P9	VIDEO-1	OFF (FM MUTE)	4-2	4-2	4-2
P10	(VIDEO-1)	ON (FM MUTE)	5-2	5-2	5-2
P11	VIDEO-2	FM MUTE	1-3	1-3	1-3
P12	(VIDEO-2)	STUDIO	2-3	2-3	2-3
P13	VIDEO-3	ARENA	3-3	3-3	3-3
P14	(VIDEO-3)	LIVE	4-3	4-3	4-3
P15	VIDEO-4	HALL	5-3	5-3	5-3
P16	(VIDEO-4)	THEATER	1-4	1-4	1-4
P17	TAPE-1	THX CINEMA	2-4	2-4	2-4
P18	(TAPE-1)	DOLBY PRO LOGIC	3-4	3-4	3-4
P19	TAPE-2	BY PASS	4-4	4-4	4-4
P20	(TAPE-2)	SURROUND MODE	5-4	5-4	5-4
P21	TUNER	MONO	1-5	1-5	1-5
P22	(TUNER)	STEREO	2-5	2-5	2-5
P23	PHONO	MODE	3-5	3-5	3-5
P24	(PHONO)	OFF (SUBWOOFER)	4-5	4-5	4-5
P25	CD	ON (SUBWOOFER)	5-5	5-5	5-5
P26	(CD)	SUBWOOFER	1-6	1-6	1-6
P27	kHz	B	2-6	2-6	2-6
P28	MHz	A	3-6	3-6	3-6
P29	S1	SPEAKERS	4-6	4-6	4-6
P30	RDS	4	5-6	5-6	5-6
P31	-	3	1-7	1-7	1-7
P32	-	2	2-7	2-7	2-7
P33	-	1	3-7	3-7	3-7
P34	-	VIDEO	4-7	4-7	4-7
P35	-	-	5-7	5-7	5-7
P36	-	-	-	o	-

PRINTED CIRCUIT BOARD-PARTS LIST

MAIN CIRCUIT PC BOARD (NAAR-5567-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q301	22240191	NJM4565D-D
Q302~Q308	22240293 or	NJM4558L-D or
	22240247	BA15218N
Q309	22240798	TC9162AN
Q310	22240829	TC9274N-008
Q701	22240938R3	MPD78058GC-207
Q704	22240239	TA7291S
Q921	222780125NEC	MPC78M12HF
Q922	222790125JRC	NJM79M12FA
Q923	222780055MIT	M5F78M05L
Q924	222790055MIT	M5F79M05L
Q925	222780565JRC	NJM78M56FA
	Transistors	
Q702	221282 or	DTC144ES or
	2213560	RN1204
Q703	2213510 or	DTA114ES or
	2214350	RN2202
Q926	2211455	2SA1015-GR
Q927,Q931	2213284 or	2SC1740S-R or
	2212115	2SC2458-GR
Q928	2202116 or	2SD2061-F or
	2202115	2SD2061-E
Q929	2211255	2SC1815-GR
Q930	2213640 or	DTC123JS or
	2214660	RN1205
	Diodes	
D701~D705	223205,	1SS270A,
D707,D925	223163 or	1SS133 or
D926,D928	223222	WG713A
D706	224470562	MTZJ5.6B, Zener
D921~D924	22380260,	RL1N4003,
D927,D929	22380035 or	GP104003E or
D930,D939	22380046	AM01Z
D931	224473604	MTZJ36D, Zener
D932~D935	223205,	1SS270A,
D937,D938	223163 or	1SS133 or
	223222	WG713A
D936	224470623	MTZJ6.2C, Zener
D940	22380260,	RL1N4003,
	22380035 or	GP104003E or
	22380046	AM01Z
	Coil	
L701	233454K220	NCH-1452, 220K, Choke
	Resonator	
X701	3010242	CST5.00MGW, Ceramic
	Capacitors	
C302,C307	354741009	10 μF, 16V,Elect.
C304,C404	354721019	100 μF, 6.3V,Elect.
C305,C405	374726824	6800pF±5%,50V, Plastic
C306,C406	374721824	1800pF±5%,50V, Plastic
C308,C408	374721015	100pF±10%,50V, Plastic <D>
C308,C408	374724714	470pF±5%,50V, Plastic <P>
C309,C312	354741009	10 μF, 16V,Elect.
C315,C317	354741009	10 μF, 16V,Elect.
C320,C323	354741009	10 μF, 16V,Elect.
C325,C331	354741009	10 μF, 16V,Elect.
C402,C407	354741009	10 μF, 16V,Elect.
C409,C412	354741009	10 μF, 16V,Elect.
C415,C417	354741009	10 μF, 16V,Elect.
C420,C423	354741009	10 μF, 16V,Elect.
C425,C431	354741009	10 μF, 16V,Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C701,C704	354721019	100 μF, 6.3V,Elect.
C702	3000076 or	0.1F, 5.5V or
C702	3000078	0.1F, 5.5V, Super
C703	375524744	0.47 μF±5%,50V, Plastic
C705	354780109	1 μF, 50V,Elect.
C707,C926	354741009	10 μF, 16V,Elect.
C711	354721019	100 μF, 6.3V,Elect.
C923	354754729	4700 μF, 25V,Elect.
C924	354761029	1000 μF, 35V,Elect.
C928,C931	354741009	10 μF, 16V,Elect.
C929,C941	354761019	100 μF, 35V,Elect.
C933,C936	354741009	10 μF, 16V,Elect.
C934	354751029	1000 μF, 25V,Elect.
C937	354762219	220 μF, 35V,Elect.
C938	354782219	220 μF, 50V,Elect.
C944	354741009	10 μF, 16V,Elect.
C945	354754719	470 μF, 25V,Elect.
	Resistors	
R921,R922	453532294	0.22Ω ±5%,1/2W,Metal
R923	453530104	1Ω ±5%,1/2W,Metal
R924	453530824	8.2Ω ±5%,1/2W,Metal
R925	443621204	12Ω ±5%,1W,Metal oxide
R926,R929	443621804	18Ω ±5%,1W,Metal oxide
R928,R932	443522204	22Ω ±5%,1/2W,Metal oxide
R930,R931	443621514	150Ω ±5%,1W,Metal oxide
R938	443522204	22Ω ±5%,1/2W,Metal oxide
R939	443523314	330Ω ±5%,1/2W,Metal oxide
R941,R943	453530104	1Ω ±5%,1/2W,Metal
R1931~R1938	443621814	180Ω ±5%,1W,Metal oxide
R1921~R1924	453632294	0.22Ω ±5%,1W,Metal
	Terminals	
P301~P303	25045300	NPJ-6PDBL159, PIN JACK
P304	25045303	NPJ-4PDBL162, PIN JACK
	Wire Traps	
JL351b	25055633	NPLG-12P595
JL701a	25050980	NSCT-40P767
	Wire holders	
JL251a,JL941a	25051096	NSCT-12P883
	Plugs	
P102a,P1402a	25055653	NPLG-16P609
P102a,P1403a	25055651	NPLG-12P607
P1401a	25055649	NPLG-8P605
P1404a	25055652	NPLG-14P608
P321a	25055133	NPLG-3P117
P921a	25055168	NPLG-5P152
	Radiators	
Q921a,Q923a	27160209	RAD-67

FRONT/CENTER POWER AMPLIFIER PC BOARD (NAAF-5572-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q501,Q601	2215428 or	2SC5169-H or
	2215427	2SC5169-G
Q502,Q602	2211732 or	2SC1845-F or
	2211733	2SC1845-E
Q503,Q508	2213284 or	2SC1740S-R or
Q603,Q608	2212115	2SC2458-GR
Q504,Q505	2214974 or	2SA1123-R or
Q604,Q605	2214975	2SA1123-S
Q506,Q606	2211792 or	2SA992-F or
	2211793	2SA992-E

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q507,Q509	2214984 or	2SC2631-R or
Q607,Q609	2214985	2SC2631-S
Q510,Q515	2214974 or	2SA1123-R or
Q610,Q615	2214975	2SA1123-S
Q511,Q611	2203010	2SC5171
Q512,Q612	2203000	2SA1930
Q513,Q613	2202823 or	* 2SC5200-O or
	2202822	* 2SC5200-R
Q514,Q614	2202813 or	* 2SA1943-O or
	2202812	* 2SA1943-R
Q516,Q616	2211732 or	2SC1845-F or
	2211733	2SC1845-E
Q541,Q542	2213284 or	2SC1740S-R or
	2212115	2SC2458-GR
Q1501	2215428 or	2SC5169-H or
	2215427	2SC5169-G
Q1502	2211732 or	2SC1845-F or
	2211733	2SC1845-E
Q1503,Q1508	2213284 or	2SC1740S-R or
	2212115	2SC2458-GR
Q1504,Q1505	2214974 or	2SA1123-R or
Q1515	2214975	2SA1123-S
Q1506	2211792 or	2SA992-F or
	2211793	2SA992-E
Q1507,Q1509	2214984 or	2SC2631-R or
	2214985	2SC2631-S
Q1510	2214974 or	2SA1123-R or
	2214975	2SA1123-S
Q1511	2203010	2SC5171
Q1512	2203000	2SA1930
Q1513	2202823 or	* 2SC5200-O or
	2202822	* 2SC5200-R
Q1514	2202813 or	* 2SA1943-O or
	2202812	* 2SA1943-R
Q1516	2211732 or	2SC1845-F or
	2211733	2SC1845-E
	Diodes	
D501,D601	223205,	1SS270A,
D503~D505	223163 or	1SS133 or
D603~D605	223222	WG713A
D502,D602	22380012	HER303F
D911	22380273	RS804M
D1501	223205,	1SS270A,
D1503~D1505	223163 or	1SS133 or
	223222	WG713A
D1502	22380012	HER303F
	Capacitors	
C502,C602	354781009	10 μ F, 50V,Elect.
C505,C605	354742219	220 μ F, 16V,Elect.
C513,C518	354741019	100 μ F, 16V,Elect.
C514,C515	354764709	47 μ F, 35V,Elect.
C516,C616	374724734	0.047 μ F±5%,50V, Plastic
C520,C541	354721019	100 μ F, 6.3V,Elect.
C521,C522	354700109	1 μ F, 160V,Elect.
C542	354780109	1 μ F, 50V,Elect.
C613,C618	354741019	100 μ F, 16V,Elect.
C614,C615	354764709	47 μ F, 35V,Elect.
C620	354721019	100 μ F, 6.3V,Elect.
C621,C622	354700109	1 μ F, 160V,Elect.
C911,C912	374731044	0.1 μ F±5%,100V, Plastic
C913,C914	3504259	12000 μ F, 71V,Elect.
C915	374721044	0.1 μ F±5%,50V, Plastic

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C916	374721044	0.1 μ F±5%,50V, Plastic
C1502	354781009	10 μ F, 50V,Elect.
C1505	354742219	220 μ F, 16V,Elect.
C1513,C1518	354741019	100 μ F, 16V,Elect.
C1514,C1515	354764709	47 μ F, 35V,Elect.
C1516	374724734	0.047 μ F±5%,50V, Plastic
C1520	354721019	100 μ F, 6.3V,Elect.
C1521,C1522	354700109	1 μ F, 160V,Elect.
	Resistors	
R513,R514	443521014	100Ω ±5%,1/2W,Metal oxide
R515	443525604	56Ω ±5%,1/2W,Metal oxide
R516	443528204	82Ω ±5%,1/2W,Metal oxide
R517,R523	443521014	100Ω ±5%,1/2W,Metal oxide
R522	443524714	470Ω ±5%,1/2W,Metal oxide
R524,R525	453530824	8.2Ω ±5%,1/2W,Metal
R526,R527	453630334	3.3Ω ±5%,1W,Metal
R528	453530824	8.2Ω ±5%,1/2W,Metal
R532	4000116	MPC74-5WK, 0.1Ω, Metal plate
R533	443521524	1.5kΩ ±5%,1/2W,Metal oxide
R538,R539	453530224	2.2Ω ±5%,1/2W,Metal
R548,R549	443521014	100Ω ±5%,1/2W,Metal oxide
R613,R614	443521014	100Ω ±5%,1/2W,Metal oxide
R615	443525604	56Ω ±5%,1/2W,Metal oxide
R616	443528204	82Ω ±5%,1/2W,Metal oxide
R617,R623	443521014	100Ω ±5%,1/2W,Metal oxide
R622	443524714	470Ω ±5%,1/2W,Metal oxide
R624,R625	453530824	8.2Ω ±5%,1/2W,Metal
R626,R627	453630334	3.3Ω ±5%,1W,Metal
R628	453530824	8.2Ω ±5%,1/2W,Metal
R632	4000116	MPC74-5WK, 0.1Ω, Metal plate
R633	443521524	1.5kΩ ±5%,1/2W,Metal oxide
R638,R639	453530224	2.2Ω ±5%,1/2W,Metal
R648,R649	443521014	100Ω ±5%,1/2W,Metal oxide
R911	443524724	4.7kΩ ±5%,1/2W,Metal oxide
R1513,R1514	443521014	100Ω ±5%,1/2W,Metal oxide
R1515	443525604	56Ω ±5%,1/2W,Metal oxide
R1516	443528204	82Ω ±5%,1/2W,Metal oxide
R1517,R1523	443521014	100Ω ±5%,1/2W,Metal oxide
R1522	443524714	470Ω ±5%,1/2W,Metal oxide
R1524,R1525	453530824	8.2Ω ±5%,1/2W,Metal
R1526,R1527	453630334	3.3Ω ±5%,1W,Metal
R1528	453530824	8.2Ω ±5%,1/2W,Metal
R1532	4000116	MPC74-5WK, 0.1Ω, Metal plate
R1533	443521524	1.5kΩ ±5%,1/2W,Metal oxide
R1538,R1539	453530224	2.2Ω ±5%,1/2W,Metal
R1548,R1549	443521014	100Ω ±5%,1/2W,Metal oxide
	Plug	
P511a	25055236	NPLG-5P22
	Wire holders	
JL501a	25051113	NSCT-9P900
JL911a	25051112	NSCT-8P899

CAUTION: Replacement for transistor of mark * , if necessary must be made from the same beta group (HFE) as the original type.

POWER SUPPLY CIRCUIT PC BOARD (NAPS-5577-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q951	2212115 or	2SC2458-GR
	2213284	2SC1740S-R
Q952	2213640 or	DTC123JS
	2214660	RN1205
Q953	2213830 or	DTB113ZS
	2214690	RN2226
Q961	2211733 or	2SC1845-E
	2211732	2SC1845-F
Q962	2211793 or	2SA992-E
	2211792	2SA992-F
Q971	2212445	2SK365-GR
Q972,Q973	2212115 or	2SC2458-GR
Q991,Q992	2213284	2SC1740S-R
Q974	2202116 or	2SD2061-F
	2202115	2SD2061-E
Q981,Q982	221282 or	DTC144ES
	2213560	RN1204
	Diodes	
D951~D954	22380260,	RL1N4003,
	22380035 or	GP104003E or
	22380046	AM01Z
D955,D956	223205,	1SS270A,
D961,D962	223163 or	1SS133 or
D971,D973	223222	WG713A
D974,D983	223205,	1SS270A,
D991~D993	223163 or	1SS133 or
	223222	WG713A
	Coils	
L501,L551	231176	S-1.3C, S COIL
L601,L651	231176	S-1.3C, S COIL
L1501	231176	S-1.3C, S COIL
	Transformer	
T902	2300670	⚠ NPT-1111D, Power <D>
T902	2300671	⚠ NPT-1111P, Power <P>
	Capacitors	
C901	3500191	⚠ DE7150F103M
C952	354742219	220 μ F, 16V,Elect.
C961,C982	354741009	10 μ F, 16V,Elect.
C971	354721019	100 μ F, 6.3V,Elect.
C972	354761019	100 μ F, 35V,Elect.
C981	374724724	4700pF±5%,50V, Plastic
	Resistors	
R1544,R1545	443625614	560Ω ±5%,1W,Metal oxide
R544,R644	443623914	390Ω ±5%,1W,Metal oxide
R902~R904	4000146	S3R014, Thermistor <D>
R902~R905	4000147	S5R114, Thermistor <P>
R951	453530824	8.2Ω ±5%,1/2W,Metal
R953	443622214	220Ω ±5%,1W,Metal oxide <D>
R953	443622714	270Ω ±5%,1W,Metal oxide <P>
R953	443622714	270Ω ±5%,1W,Metal oxide
R953	443622214	220Ω ±5%,1W,Metal oxide
	Relaies	
RL501,RL502	25065510	NRL-2P5A-DC24-095
RL551,RL1501	25065510	NRL-2P5A-DC24-095
RL901,RL902	25065248	⚠ NRL-1P15A-DC12-29 <D>
RL901,RL902	25065508	⚠ NRL-1P10A-DC12-093 <P>
	Fuse holders	
F901a	25050065	⚠ YSH403T <D>
F902a	25050065	⚠ YSH403T <P>
F903a	25050065	⚠ YSH403T <P>
F915a,F916a	25050065	⚠ YSH403T

CIRCUIT NO.	PART NO.	DESCRIPTION
	Fuses	
F901	252154	⚠ 8A-TSC <D>
F902	252077	⚠ 4A-SE-EAK <P>
F903	252075	⚠ 2.5A-SE-EAK <P>
F915,F916	252153	⚠ 6.3A-TSC <D>
F915,F916	252079	⚠ 6.3A-SE-EAK <P>
	Wire traps	
JL501b	25050273	NSCT-9P101
JL503b	25055624	NPLG-3P586
JL551b	25050270	NSCT-6P98
JL911b	25050272	NSCT-8P100
JL915b	25050267	NSCT-3P95
JL941b	25055633	NPLG-12P595
	Wire holders	
JL502b	25051112	NSCT-8P899
JL552b	25051108	NSCT-4P895
	Plugs	
P901a	25055675	NPLG-2P631, P PLUG
P907a	25055167	NPLG-4P151, P PLUG
P911a	25055166	NPLG-3P150, P PLUG
P915a	25055167	NPLG-4P151, P PLUG
P971a	25055099	NPLG-2P83, P PLUG
P972a	25055708	NPLG-12P664, P PLUG
P981	25045433	HSJ-1003-01-013, JACK <D>
P981	25045293	HSJ-1003-01-012, JACK <P/DT>
P982	25045172	HSJ-1003-01-020, JACK

AC OUTLET TERMINAL PC BOARD (NAETC-5578-1A/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
P902	25051220	⚠ NSCT-6P1010, AC outlet <D>

AC OUTLET TERMINAL PC BOARD (NAETC-5579-1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
P903	25051125	⚠ NSCT-4P912, AC outlet <P>

SPEAKER TERMINAL PC BOARD (NAECT-5580-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
P501	25060147	NTM-4PDMN075, Terminal
P502	25060235	NTM-6PDMN157, Terminal
JL502a	25051112	NSCT-8P899, Wire holder

SURROUND SPEAKER TERMINAL PC BOARD (NAECT-5581-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
P551	25060147	NTM-4PDMN075, Terminal
JL552a	25051108	NSCT-4P895, Wire holder

HEADPHONE TERMINAL PC BOARD (NAETC-5582-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
P503	25045257	YKB26-5138,Headphonne jack
JL503a	25051087	NSCT-3P874, Wire holder

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

NOTE: <D> :120V model only
<P> :230V model only
<PT> :Taiwanese model only

ADJUSTMENT PROCEDURES

Preparation

1. Input

FM mono: 1kHz, 75kHz devi., 60dB/μ V

FM stereo: 1kHz, 67.5kHz devi., 60dB/μ V

Pilot signal 19kHz 7.5kHz devi.

AM: 400Hz, 30% mod.

2. Outputs

Connect the non-inductive type resistor of 8 ohms to the all speaker terminals unless otherwise noted.

1.FM ADJUSTMENT

Item	Step	Connection of instrument	FM SG output	Stereo modulator output	Tuning frequency	Output indicator	Adjustment point	Adjust for	Remarks
FM IF/RF	1	Fig.1	99.0MHz 1kHz 75kHz devi. 65dBf(60dB)	—	99.0MHz	DC voltmeter	L101	0±20mV	FM MUTE/MODE switch:OFF/MONO Repeat the steps 1 and 3 until no further adjustment is necessary.
	2					AC voltmeter	IFT on the front end	Maximum	
	3					Distortion analyzer	L102	Minimum	
Stereo Distortion		Fig.2	99.0MHz Ext. mod.65dBf(60dB)	Channel L or R 1kHz	99.0MHz	Distortion analyzer	IFT on the front end	Minimum	Don't turn more than ±180°
Stereo Separation	1	Fig.2	99.0MHz Ext. mod. 65dBf(60dB)	Channel L 1kHz	99.0MHz	Channel R AC voltmeter	R150	Minimum	Maximum and same separation
	2			Channel R 1kHz		Channel L AC voltmeter		Minimum	
Muting Level		Fig.2	99.0MHz 19.2dBf(14dB)	—	99.0MHz	Oscilloscope	R158	Signal output	
RDS		Fig.3	99.0MHz Ext. mod.60dB	RDS data or 57kHz 3% devi.	99.0MHz	Oscilloscope	R191	Maximum	TX-SV525R only

2.AM ADJUSTMENT

120V model

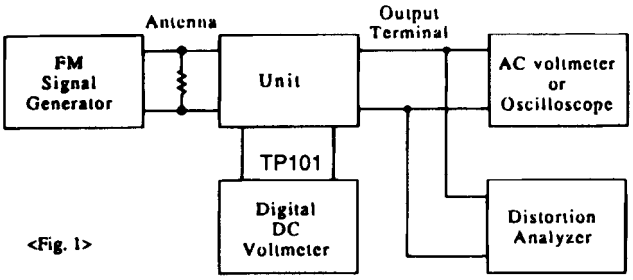
Step	AM SG output	Tuning Frequency	Output Indicator	Adjustment point	Adjust for
1		530kHz	Digital DC voltmeter	OSC coil on RF block L151	1.4±0.2V
2	600kHz 400Hz 30% mod. 60dB/m	600kHz	AC voltmeter	RF coil on RF block L151	Maximum
3	990kHz 400Hz 30% mod. 60dB/m	990kHz	AC voltmeter	L152	Maximum

Reference Specification
FM tuned voltage:87.5MHz～108.0MHz
More than 1.3V ～Less than 10V
AM tuned voltage:530kHz～1710kHz
1.4±0.2V～Less than 9.0V

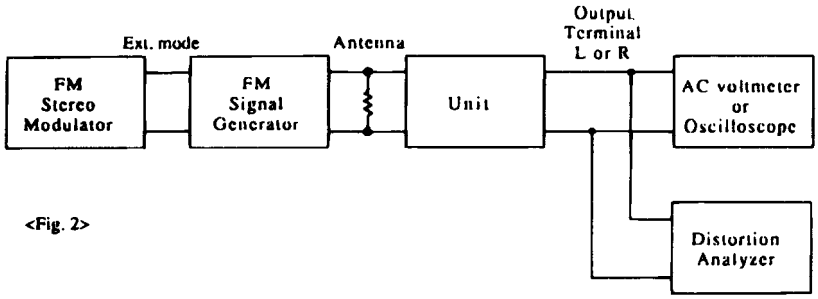
230V models

Step	AM SG output	Tuning Frequency	Output Indicator	Adjustment point	Adjust for
1		522kHz or 531kHz	Digital DC voltmeter	OSC coil on RF block L151	1.3±0.1V
2	603kHz 400Hz 30% mod. 60dB/m	603kHz	AC voltmeter	RF coil on RF block L151	Maximum
3	999kHz 400Hz 30% mod. 60dB/m	999kHz	AC voltmeter	L152	Maximum

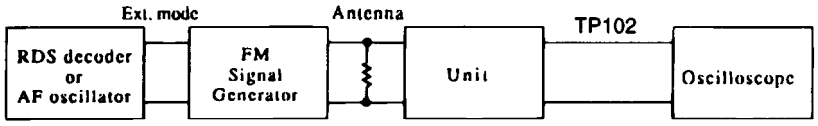
Reference Specification
FM tuned voltage:87.5MHz～108.0MHz
More than 1.3V ～Less than 10V
AM tuned voltage:522kHz～1611kHz
1.3±0.2V～Less than 9.0V



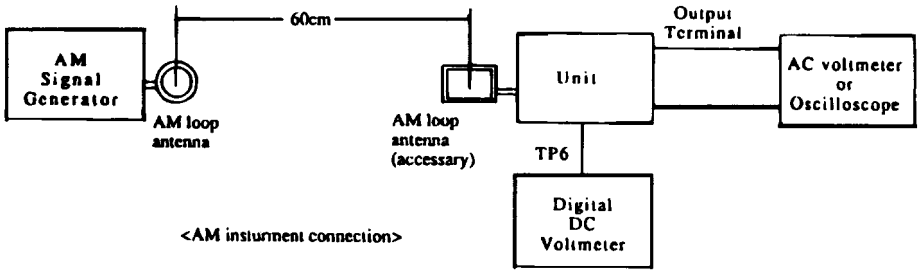
<Fig. 1>



<Fig. 2>



<Fig. 3>



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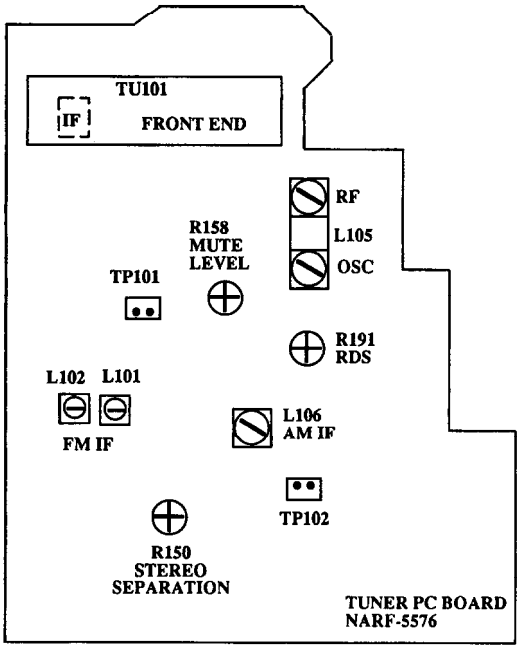


Adjustment point

PRINTED CIRCUIT BOARD-PARTS LIST

VOLUME AND SURROUND SELECTOR PC BOARD (NAAF-5570-1A/B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q1340,Q1401	22240943R2	TC9163AF
Q1341~Q1343	22240581R1	NJM4565M
Q1402	22240581R1	NJM4565M
Q1405~Q1408	22240944R2	TC9212F
Q1409~Q1416	22240581R1	NJM4565M
Q1419~Q1434	2213631 or	RN1241-A or
	2213632	RN1241-B
Q1435~Q1442	2213510 or	DTA114ES or
	2214350	RN2202
	Diodes	
D1401~D1408	223234R2	1SS352
	Capacitors	
C1351,C1353	374722244	0.22 μ F±5%,50V, Plastic
C1352,C1354	374721244	0.12 μ F±5%,50V, Plastic
C1356,C1358	374721244	0.12 μ F±5%,50V, Plastic
C1360,C1362	374721244	0.12 μ F±5%,50V, Plastic
C1363~C1366	374722244	0.22 μ F±5%,50V, Plastic
C1401~C1404	374722244	0.22 μ F±5%,50V, Plastic
C1405,C1406	374726834	0.068 μ F±5%,50V, Plastic

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C1411~C1418	354741009	10 μ F, 16V,Elect.
C1419~C1426	354780229	2.2 μ F, 50V,Elect.
C1435~C1442	354741009	10 μ F, 16V,Elect.
C1443~C1450	354780229	2.2 μ F, 50V,Elect.
C1459~C1466	354744709	47 μ F, 16V,Elect.
C1467~C1474	354780229	2.2 μ F, 50V,Elect.
C1483,C1484	354741009	10 μ F, 16V,Elect.
	Resistor	
R1391	5142017	N16RGL20KB25F, Variable
	Wire holders	
JL381b,JL382b	25051093	NSCT-9P880
JL383b	25051091	NSCT-7P878
JL384b	25051093	NSCT-9P880
	Sockets	
P1401	25050983	NSCT-8P770
P1402	25050987	NSCT-16P774
P1403	25050985	NSCT-12P772
P1404	25050986	NSCT-14P773

PREOUT/MAIN IN PC BOARD (NAETC-5571-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C1301~C1308	374723324	3300pF±5%,50V, Plastic
C1309~C1311	374721015	100pF±10%,50V, Plastic <D>
C1309~C1311	374724714	470pF±5%,50V, Plastic <P>
C1313,C1314	374721015	100pF±10%,50V, Plastic <D>
C1313,C1314	374724714	470pF±5%,50V, Plastic <P>
	Terminals	
P1301	25045340	NPJ-4PDBL191
P1302	25045300	NPJ-6PDBL159
P1303	25045303	NPJ-4PDBL162
	Socket	
P511a	2009990382	NSAS-10P0519
	Wire holders	
JL381a,JL382a	25051093	NSCT-9P880

AC-3 INPUT TERMINAL PC BOARD (NAETC-5586-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
Q1331~Q1333	22240581R1	NJM4565M,ICs
C1331~C1336	374721015	100pF±10%,50V, Plastic capacitor <D>
C1331~C1336	374724714	470pF±5%,50V, Plastic capacitor <P>
C1337~C1342	354741009	10 μ F, 16V,Elect. capacitors
P383a	25051091	NSCT-7P878,Wire holder
P384a	25051093	NSCT-9P880,Wire holder
P1331	25051219	NSCT-25P1009, Socket

NOTE: <D> :120V model only
<P> :230V model only

PRINTED CIRCUIT BOARD-PARTS LIST

DISPLAY CIRCUIT PC BOARD (NADG-5569-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Remote sensor	
U1701	24130011	PIC-12043TE2
	FL tube	
Q1701	212147	13-BT-141GK, FL TUBE
	ICs	
Q801,Q802	22240581R1	NJM4565M
Q803	22240952R2	TLC320AD58C
Q811	22240940R3	XC56004FJ66
Q812	22240720 or	LH2464-10 or
	22240867	LC32464P-80
Q821~Q823	22240942R9	AK4320-VM
Q824	222740045R1TO	TC74HCU04AF
Q825~Q827	22240581R1	NJM4565M
Q1702	22240685R9	M66004FP
	Transistors	
Q804,Q813	2213284 or	2SC1740S-R or
Q828	2212115	2SC2458-GR
Q1704,Q1705	2213284 or	2SC1740S-R or

CIRCUIT NO.	PART NO.	DESCRIPTION
	Diodes	
D803	223234R2	1SS352
D804,D811	224480562R2 or	DTZ5.6B, C-ZENER D
D823,D1712	224490560R2	UDZ5.6B, C-ZENER D
D813,D814	223234R2	1SS352
D1701,D1702	225291DT	SEL4910D-D, LED
D1703,D1711	223234R2	1SS352
D1713,D1714	223234R2	1SS352
	Coils	
L801,L802	231237K470R2	NCH-1479, Choke
L821,L822	231237K470R2	NCH-1479, Choke
L823	230916R2	BLM31B601SPT, Choke
L824	231237K470R2	NCH-1479, Choke
	Resonator	
X801	3010230T	CST16.93MXW040, Ceramic

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C801,C802	353741009	10 μ F, 16V,Elect.
C807,C808	374721024	1000pF±5%,50V, Plastic
C809	353741009	10 μ F, 16V,Elect.
C812,C814	353721019	100 μ F, 6.3V,Elect.
C816,C824	353721019	100 μ F, 6.3V,Elect.
C822	375524744	0.47 μ F±5%,50V, Plastic
C825	374726844	0.68 μ F±5%,50V, Plastic
C829,C836	353721019	100 μ F, 6.3V,Elect.
C840,C1717	353721019	100 μ F, 6.3V,Elect.
C845~C849	353721019	100 μ F, 6.3V,Elect.
C851~C856	353741009	10 μ F, 16V,Elect.
C857~C862	374724724	4700pF±5%,50V, Plastic
C863~C874	374722224	2200pF±5%,50V, Plastic
C875~C880	374726824	6800pF±5%,50V, Plastic
C887~C892	353741009	10 μ F, 16V,Elect.
C1702,C1716	353741009	10 μ F, 16V,Elect.
C1714,C1718	375524744	0.47 μ F±5%,50V, Plastic

CIRCUIT NO.	PART NO.	DESCRIPTION
	Resistor	
R1705	49163103413	RM1/10IJ10K×13,Array
	Switches	
S701~S707	25035652	NPS-111-S604, Push
S709~S731	25035652	NPS-111-S604, Push
S733~S748	25035652	NPS-111-S604, Push
	Holder	
Q1701a	27190913Y	FL tube
	Wire holder	
JL701b	25050946	NSCT-40P733, WIRE HOL

PRINTED CIRCUIT BOARD-PARTS LIST

SURROUND POWER AMPLIFIER PC BOARD (NAAF-5574-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q551,Q651	2215428 or 2215427	2SC5169-H or 2SC5169-G
Q552,Q652	2211733 or	2SC1845-E or
Q566,Q666	2211732	2SC1845-F
Q553,Q653	2213284 or	2SC1740S-R or
Q558,Q658	2212115	2SC2458-GR
Q554~Q556	2214975 or	2SA1123-S or
Q654~Q656	2214974	2SA1123-R
Q557,Q657	2214985 or	2SC2631-S or
Q559,Q659	2214984	2SC2631-R
Q560,Q660	2214975 or	2SA1123-S or
Q565,Q665	2214974	2SA1123-R
Q561,Q661	2203010	2SC5171
Q562,Q662	2203000	2SA1930
Q563,Q663	2203063 or	* 2SC5198-O or
	2203062	* 2SC5198-R
Q564,Q664	2203053 or	* 2SA1941-O or
	2203052	* 2SA1941-R
Q591,Q592	2213284 or 2212115	2SC1740S-R or 2SC2458-GR
	Diodes	
D551,D553	223205,	1SS270A,
D651,D653	223163 or 223222	1SS133 or WG713A
D552,D652	22380012	HER303F
D915	22380271, 22380272 or 22380022	D3SBA20, D3SBA60 or RBV402
	Capacitors	
C552,C652	354781009	10 μ F, 50V,Elect.
C555,C655	354742219	220 μ F, 16V,Elect.
C563,C568	354741019	100 μ F, 16V,Elect.
C564,C565	354764709	47 μ F, 35V,Elect.
C566,C666	374724734	0.047 μ F±5%,50V, Plastic
C570,C670	354721019	100 μ F, 6.3V,Elect.
C571,C572	354784709	47 μ F, 50V,Elect.
C591	354721019	220 μ F, 6.3V,Elect.
C592	354780109	1 μ F, 50V,Elect.
C663,C668	354741019	100 μ F, 16V,Elect.
C664,C665	354764709	47 μ F, 35V,Elect.
C671,C672	354784709	47 μ F, 50V,Elect.
C917,C918	3504272	6800 μ F, 50V,Elect.
	Resistors	
R563,R663	443526804	68 Ω ±5%,1/2W,Metal oxide
R564,R664	443526804	68 Ω ±5%,1/2W,Metal oxide
R565,R665	443525604	56 Ω ±5%,1/2W,Metal oxide
R566,R666	443525604	56 Ω ±5%,1/2W,Metal oxide
R567,R667	443526804	68 Ω ±5%,1/2W,Metal oxide
R572,R672	443524714	470 Ω ±5%,1/2W,Metal oxide
R573,R673	443521014	100 Ω ±5%,1/2W,Metal oxide
R574,R575	453530824	8.2 Ω ±5%,1/2W,Metal
R576,R676	453630684	6.8 Ω ±5%,1W,Metal
R578,R678	453530824	8.2 Ω ±5%,1/2W,Metal
R582,R682	4000145	MPC78-2WK, 0.1 Ω, Metal plate
R583,R683	443528214	820 Ω ±5%,1/2W,Metal oxide
R588,R589	453530224	2.2 Ω ±5%,1/2W,Metal
R598,R698	443521014	100 Ω ±5%,1/2W,Metal oxide
R599,R699	443521014	100 Ω ±5%,1/2W,Metal oxide
R674,R675	453530824	8.2 Ω ±5%,1/2W,Metal
R688,R689	453530224	2.2 Ω ±5%,1/2W,Metal

CIRCUIT NO.	PART NO.	DESCRIPTION
	Plug	
P561a	25055234	NPLG-3P218
	Wire holders	
JL551a	25051110	NSCT-6P897
JL915a	25051107	NSCT-3P894

TONE CONTROL CIRCUIT PC BOARD (NAAF-5568-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q351,Q352	22240293 or 22240247	NJM4558L-D or BA15218N
	Capacitors	
C351,C451	354741009	10 μ F, 16V,Elect.
C353,C453	354744709	47 μ F, 16V,Elect.
C355,C356	354744709	47 μ F, 16V,Elect.
C357,C358	374721534	0.015 μ F±5%,50V, Plastic
C361,C461	374721024	1000pF±5%,50V, Plastic
C362,C462	354783399	0.33 μ F, 50V,Elect.
C455,C456	354744709	47 μ F, 16V,Elect.
C457,C458	374721534	0.015 μ F±5%,50V, Plastic
	Resistors	
R356	5104230	N14RLC100KWT22Z, Variable
R359	5104230	N14RLC100KWT22Z, Variable
R363	5104365	N14RGL30KB22Z, Variable
	Wire holder	
JL351a	25051096	NSCT-12P883, WIRE HOL

XANTECH PC BOARD(NAETC-5610-1A)

(120V Model only)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Photo coupler	
Q983	24120043	ON3131
	Transistors	
Q984	2213510 or	DTA114ES or
Q984or	2214350	RN2202
Q985	2213284 or	2SC1740S-R or
Q985or	2212115	2SC2458-GR
	Diode	
D984	223205, 223163 or 223222	1SS270A, 1SS133 or WG713A
	Capacitor	
C983	354741009	10 μ F, 16V
	Socket	
P972	25051237	NSCT-12P1027

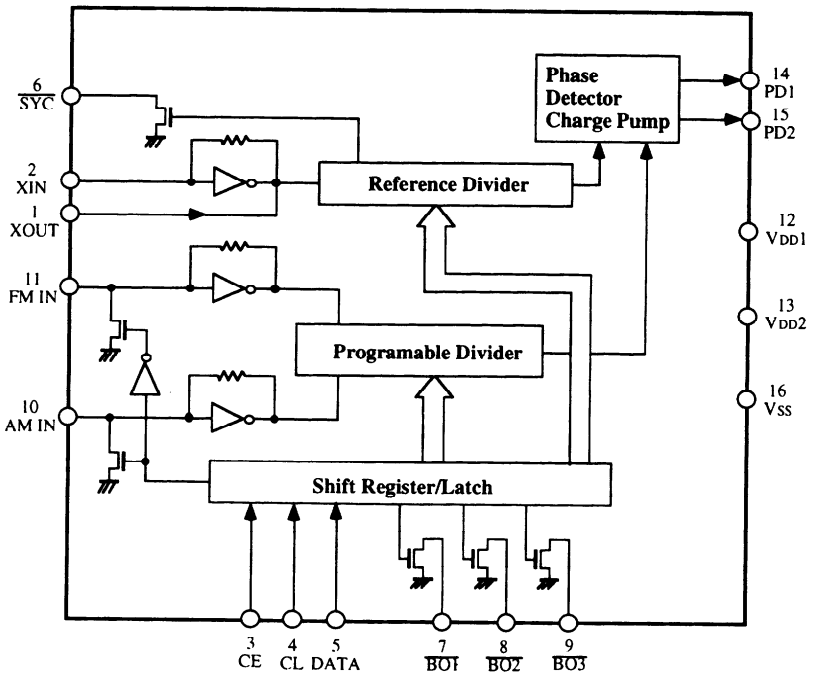
MR TERMINAL PC BOARD (NAETC-5611-1)

(230V Model only)

CIRCUIT NO.	PART NO.	DESCRIPTION
D981,D982	223205, 223163 or 223222	1SS270A, 1SS133 or WG713A,Diodes
P973	25051237	NSCT-12P1027, Socket

CAUTION: Replacement for transistor of mark * , if necessary must be made from the same beta group (HFE) as the original type.

LM7001 (PLL Synthesizer and controller)



PRINTED CIRCUIT BOARD-PARTS LIST

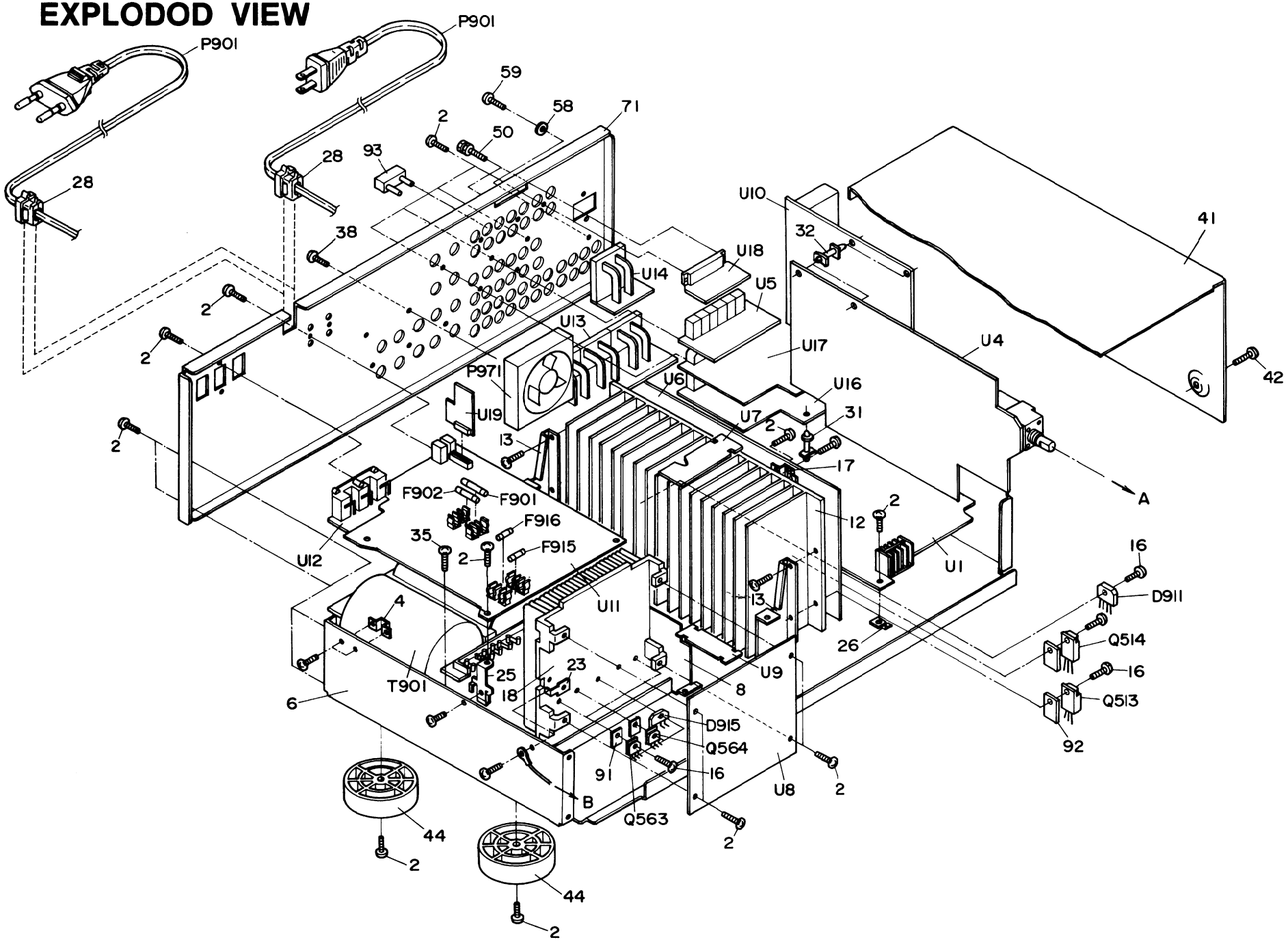
FM/AM TUNER CIRCUIT PC BOARD(NARF-5576-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Front end	
TU101	240088	FE337-A07 <D>
TU101	240089	FE415-G11 <P>
	ICs	
Q121	22240090	LM7001
Q141	22240749	LA1851N
Q176	22240293 or	NJM4558L-D or
	22240247	BA15218N
Q181	22240679	μPC1346CS <P/PB>
	Transistors	
Q101	2210746T	2SC945A-P <P>
Q102	2211723	2SC1923-O
Q122,Q142	2213510 or	DTA114ES or
Q175	2214350	RN2202
Q123	2212445	2SK365-GR
Q124,Q171	2213284 or	2SC1740S-R or
Q172	2212115	2SC2458-GR
Q143	221282 or	DTC144ES or
	2213560	RN1204
Q144	2213640 or	DTC123JS or
	2214660	RN1205
Q173,Q174	2212794	2SD1468-R
Q181	22240679	MPC1346CS <P/PB>
Q182	2213284 or	2SC1740S-R or
	2212115	2SC2458-GR <P/PB>
	Diode	
D165	224450512	MTZ5.1B, Zener
	Transformers & Coils	
L101	233457	NFIF-4081, IF
L102	233458	NFIF-4082, IF
L103	233471	NMC-6084, MPX <P>
L104	233454M022	NCH-1452, 022M, Choke
L105	232163A	NMRF-7065, RF
L106	232139	NMIF-4062, IF
L107,L108	233484	NMC-4085, MPX
	Ceramic filters	
X101	3010071	SFE10.7MA5(RED)
X102	3010071	SFE10.7MA5(RED) <P>
X103	3010071	SFE10.7MA5(RED) <D>
X103	3010130	SFE10.7MZ2A <P>
X104	3010227	CSB456F15
X105	3010123	SFZ-450JL
	Resonators	
X121	3010141	XTL-7.2M, Crystal
X181	3010203	AF6146CG, Crystal <P/PB>
	Capacitors	
C001	354741019	100μF, 16V,Elect.
C127	354721019	100μF, 6.3V,Elect.
C130	354780229	2.2μF, 50V,Elect.
C131	374722234	0.022μF±5%,50V, Plastic
C132	354783399	0.33μF, 50V,Elect.
C133,C142	354741019	100μF, 16V,Elect.
C145	354741009	10μF, 16V,Elect.
C146	374723324	3300pF±5%,50V, Plastic
C147	374721534	0.015μF±5%,50V, Plastic <D>
C147	374721034	0.01μF±5%,50V, Plastic <P>
C149	354780479	4.7μF, 50V,Elect.
C151,C152	354780109	1μF, 50V,Elect.
C153	354783399	0.33μF, 50V,Elect.
C154	354741009	10μF, 16V,Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C155,C156	374721034	0.01μF±5%,50V, Plastic <D>
C155,C156	374724324	4300pF±5%,50V, Plastic <P>
C155,C156	374724724	4700pF±5%,50V, Plastic <PT>
C159	354780229	2.2μF, 50V,Elect.
C160	354784799	0.47μF, 50V,Elect.
C162,C166	353741009	10μF, 16V,Elect.
C171,C172	354741009	10μF, 16V,Elect.
C173,C174	374722724	2700pF±5%,50V, Plastic
C175,C176	354741009	10μF, 16V,Elect.
C177	354780229	2.2μF, 50V,Elect.
C178,C179	354741009	10μF, 16V,Elect.
C183,C189	374724724	4700pF±5%,50V, Plastic <P/PB>
C184	374722234	0.022μF±5%,50V, Plastic <P/PB>
C185	374724734	0.047μF±5%,50V, Plastic <P/PB>
C186	354780229	2.2μF, 50V,Elect. <P/PB>
C187,C188	374723324	3300pF±5%,50V, Plastic <P/PB>
C190	354721019	100μF, 6.3V,Elect. <P/PB>
	Resistors	
R150	5210261T	N06HR5KBC, Trimming
R158	5210263T	N06HR20KBC, Trimming
R191	5210265T	N06HR50KBC, Trimming <P/PB>
	Terminal	
P101	25060160	NTM-4PDML086 <D>
P101	25060117	NTM-2PDMN051 <P>
	Plugs	
TP101	25055038	NPLG-2P29
TP102	25055038	NPLG-2P29 <P/PB>
	Socket	
P102	25050985	NSCT-12P77 <D/PA/PT>
P102	25050987	NSCT-16P774 <P/PB>
	Plate	
TU101a	27150346	Sheild, Front end <P>

NOTE: <D> :120V model only
<P> :230V model only
<PA> :Australian model only
<PB> :U.K. model only
<PT> :Taiwanese model only

EXPLODOD VIEW



TX-SV828THX

PRINTED CIRCUIT BOARD-PARTS LIST

VIDEO TERMINAL PC BOARD (NAETC-5583-1A/1B/1C)

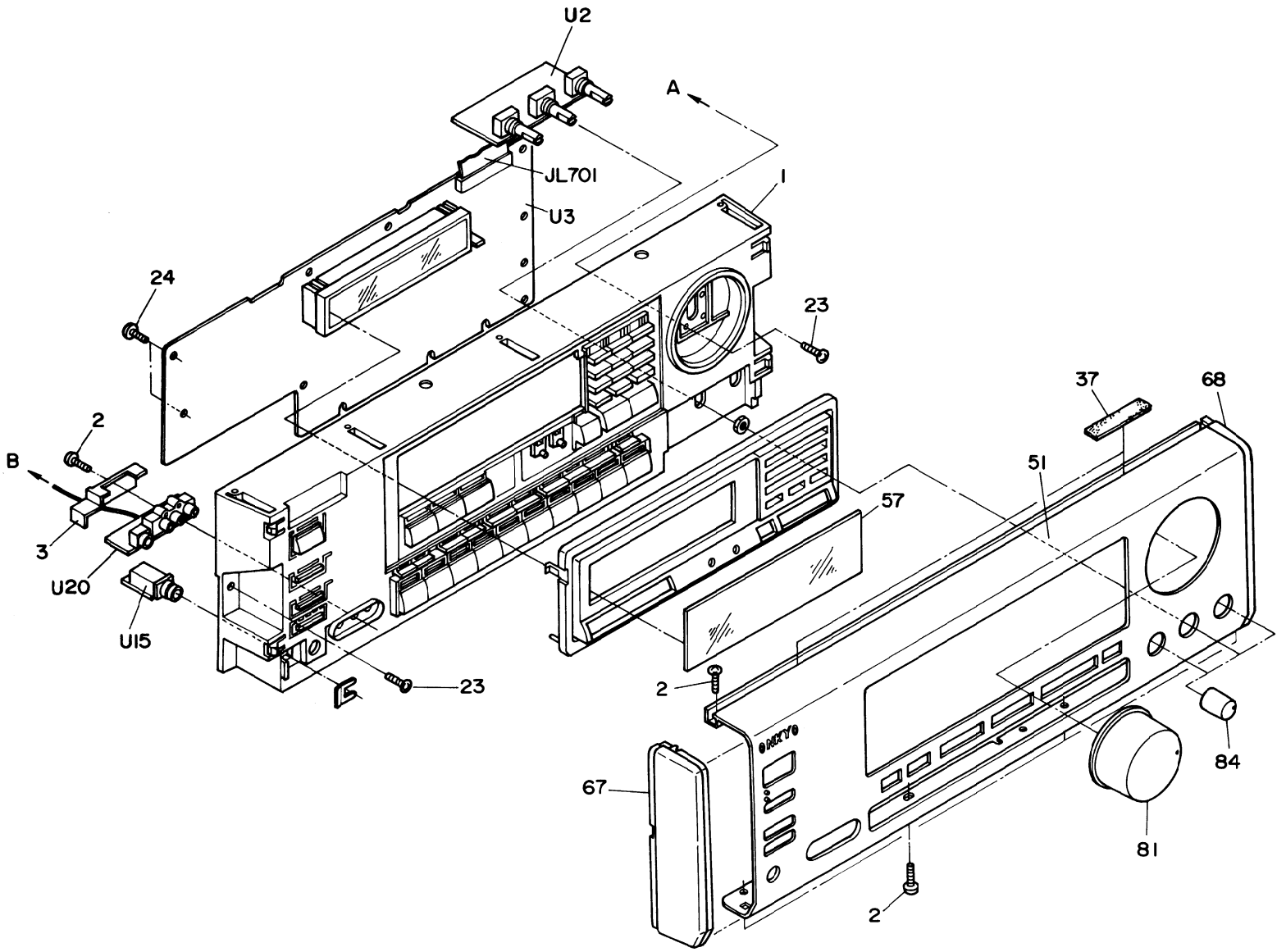
CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q251	22240373	BA7625
Q271	22240719	M35010-084SP
Q274	22240830	BA7046
Q291	222740046TOS	TC74HCU04AP <P>
Q292	222740005TOS	TC74HC00AP <P>
	Transistors	
Q252~Q254	2213354 or	2SA933S-R or
Q273	2212125	2SA1048-GR
Q255,Q272	2213284 or	2SC1740S-R or
Q275	2212115	2SC2458-GR
Q256	221282 or	DTC144ES or
	2213560	RN1204
Q276	2213510 or	DTA114ES
	2214350	RN2202
	Diodes	
D251,D252	223205,	1SS270A,
D255,D256	223163 or	1SS133 or
	223222	WG713A
D291	224470221T	MTZJ2.2A, Zener <P>
	Coils	
L271,L272	233454K220	NCH-1452, 220K, Choke
	Resonators	
X271	3010167	XTL-14.32M, Crystal <D>
X291	3010167	XTL-14.32M, Crystal <P>
X292	3010238	XTL-17.73M, Crystal <P>
	Filter	
X293	3030018	NFV610-655T2A206, EMI <P>
	Capacitors	
C251~C254	354780229	2.2 μ F, 50V,Elect.
C255~C258	354721019	470 μ F, 6.3V,Elect.
C260,C261	354721019	100 μ F, 6.3V,Elect.
C262	354780229	2.2 μ F, 50V,Elect.
C263	354741009	10 μ F, 16V,Elect.
C274	354780109	1 μ F, 50V,Elect.
C276	354744709	47 μ F, 16V,Elect.
C277	354741009	10 μ F, 16V,Elect.
C280,C281	354721019	100 μ F, 6.3V,Elect.
C284,C287	354780109	1 μ F, 50V,Elect.
C285	374722224	2200pF±5%,50V, Plastic
C288	354721019	100 μ F, 6.3V,Elect.
C296,C299	354721019	100 μ F, 6.3V,Elect. <P/DT>
C297	375524744	0.47 μ F±5%,50V, Plastic <P/DT>
	Switch	
S251	25065286	NSS-22112, Slide
	Terminals	
P251,P252	25045299	NPJ-3PDYE158, PIN JACK
	Wire holders	
JL201b,JL202b	25051091	NSCT-7P878
	Wire trap	
JL251b	25055633	NPLG-12P595

VIDEO S TERMINAL PC BOARD(NAETC-5584-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q201,Q202	22240373	BA7625
	Transistors	
Q203~Q208	2213354 or	2SA933S-R or
Q217	2212125	2SA1048-GR
Q209	2212286 or	2SC2878-B or
Q213~Q215	2212285	2SC2878-A
Q210,Q216	221282 or	DTC144ES or
Q224	2213560	RN1204
Q211,Q212	2213284 or	2SC1740S-R or
Q220	2212115	2SC2458-GR
Q218,Q219	2213510 or	DTA114ES or
	2214350T	RN2202
Q221~Q223	2212286 or	2SC2878-B or
	2212285	2SC2878-A
	Diodes	
D201~D210	223205,	1SS270A,
	223163 or	1SS133 or
	223222	WG713A
	Capacitors	
C201~C208	354780229	2.2 μ F, 50V,Elect.
C209,C211	354721019	470 μ F, 6.3V,Elect.
C210,C212	354780229	2.2 μ F, 50V,Elect.
C213,C215	354721019	470 μ F, 6.3V,Elect.
C214,C216	354780229	2.2 μ F, 50V,Elect.
C217	354744709	47 μ F, 16V,Elect.
C219	354780229	2.2 μ F, 50V,Elect.
C220	354741009	10 μ F, 16V,Elect.
C221	354721019	470 μ F, 6.3V,Elect.
C222,C225	354721019	100 μ F, 6.3V,Elect.
C226	354721019	100 μ F, 6.3V,Elect.
	Terminals	
P201,P202	25051568	NSCT-12P1355, S-VIDEO
	Plug	
P211a	25055136	NPLG-6P120, P PLUG
	Wire holders	
JL201a,Jl202a	25051091	NSCT-7P878, WIRE HOL

VIDEO-4 TERMINAL PC BOARD (NAETC-5585-1A/1B/1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
P203	25051569	NSCT-4P1356, Socket
P211	2009990383	NSAS-11P0520, Socket
P253	25045402	NPJ-3PDBL227, Terminal
P321	2000786	NSAS-6P742, Socket


U2
A
JL701
U3
1
24
23
37
68
2
B
51
3
57
U20
U15
23
2
84
67
81
2

PARTS LIST

MARK	REF. NO.	PART NO.	DESCRIPTION
	1	27110896AY	Front bracket
	2	838130088	3TTB+8B,Self-tapping screw
	3	27190967	Holder
	4	27141523	Retainer
	5	27270147	Spacer
	6	27100305A	Chassis
	8	27130762	Bracket, power transformer
	12	27160360	Radiator L
	13	27141650	Retainer HT
	16	801433	3SMS8W.SW+14B(BC), Special screw
	17	27141528	Reatiner HL-2
	18	27160359	Radiator S
	23	27141330	Retainer PC
	25	27141651	Retainer TPC
	26	27141333	Retainer S
⚠	28	27300750	Cord bushing
	29	28140881	Cushion
	31	27190470	KGLS-18S,Holder
	32	27190062	KGLS-12S,Holder
	35	830440089	4TTC+8C(BC),Self-tapping screw
	36	28175222	Isolation plate
	37	28141305	Cushion
	38	833150100	5TTP+10P,Self-tapping screw
	41	28184540AY	Top cover
	42	838440089	4TTB+8C(BC),Self-tapping screw
	44	27175251-2	Leg
	50	801541	Special screw
D/PA/PT	51~53	1A616121	Front panel ass'y
P/PB		1A617121	Front panel ass'y
D/PA/PT	51	27211751	Front panel
P/PB		27211752	Front panel
	52	28198813Y	Facet
	53	28135199Y	Badge
	54	27215264	Decorative frame
	57	28191699Y	Clear plate
	58	838230088	3TTB+8B(Ni), Nickel screw
	59	87643010	W3×10F(BC),Washer
	67	28125268Y	End cap L
	68	28125267Y	End cap R
D	71	27122137A	Rear panel
P	71	27122138A	Rear panel
PA	71	27122140A	Rear panel
	81	28325057	Knob, Volume
	84	28305055Y	Knob, Tone
⚠	91	223021	TBM-51W9043, Isolation sheet
⚠	92	223023	TBM-51W9192, Isolation sheet
	93	25055436	NPLG-2P418, Plug
	99	260208	Wire tie

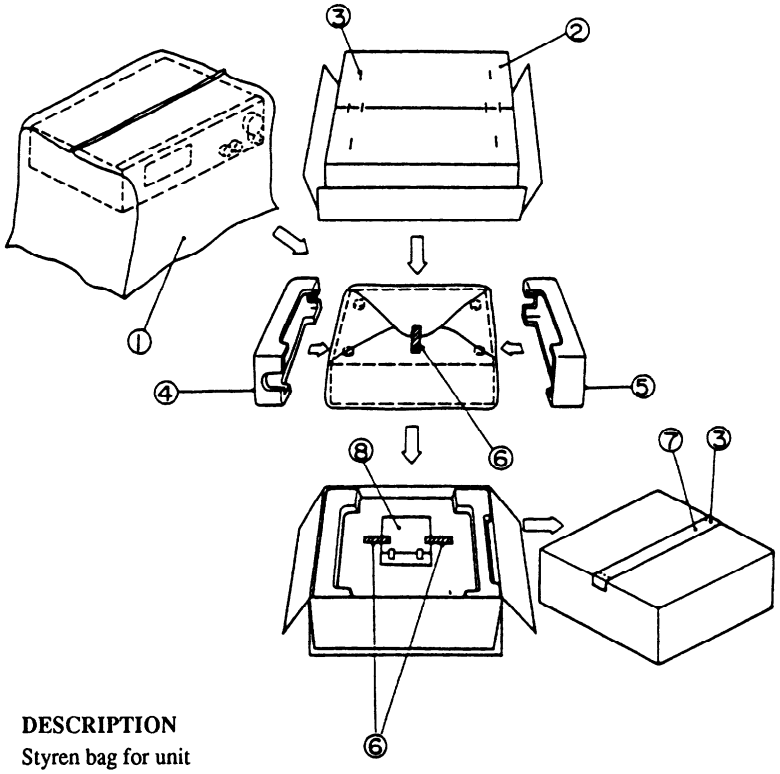
MARK	REF. NO.	PART NO.	DESCRIPTION
⚠	D911	22380273	RS804M,Diode
⚠	D915	22380271,	D3SBA20,
⚠		22380272 or	D3SBA60 or
⚠		22380022	RBV402, Diode
P		880009	NRP-345, Plastic rivet
D ⚠	F901	252154	8A-TSC, Primary Fuse
P ⚠	F902	252077	4A-SE-EAK, Primary fuse
P ⚠	F903	252075	2.5A-SE-EAK, AC outlet fuse
D ⚠	F915,F916	252153	6.3A-TSC, Secondary fuse
P ⚠	F915,F916	252079	6.3A-SE-EAK, Secondary fuse
	JL701	2047402012	NCFC7-402012, Flexible flat cable
D ⚠	P901	253192HIT	AS-UC-6#18, Power supply cord
P ⚠		253233KAW	AS-CEE-2, Power supply cord
PA ⚠		253197HIT	AS-SAA, Power supply cord
PB ⚠		253198HIT	AS-BS, Power supply cord
PT ⚠		253233KAW	AS-CEE-2, Power supply cord
PA ⚠	P904,P905	25051570	NSCT-2P1357, AC outlet
	P971	24502281	D06T-24TM02(EX), Fan
	Q513,Q613	2202823 or	2SC5200-O or
	Q1513	2202822	2SC5200-R,Transistor
	Q514,Q614	2202813 or	2SA1943-O or
	Q1514	2202812	2SA1943-R,Transistor
	Q563,Q663	2203063 or	2SC5198-O or
		2203062	2SC5198-R,Transistor
	Q564,Q664	2203053 or	2SA1941-O or
		2203052	2SA1941-R,Transistor
D ⚠	T901	2301137	NPT-1253D, Power transformer
P ⚠	T901	2301138	NPT-1253P, Power transformer
D	U1	1A616567-1A	NAAR-5567-1A, Main circuit pc board ass'y
P/PB		1A616567-1B	NAAR-5567-1B, Main circuit pc board ass'y
PA/PT		1A616567-1C	NAAR-5567-1C, Main circuit pc board ass'y
D	U2	1A616568-1A	NAAF-5568-1A, Tone control circuit pc board ass'y
P/PB		1A616568-1B	NAAF-5568-1B, Tone control circuit pc board ass'y
PA/PT		1A616568-1C	NAAF-5568-1C, Tone control circuit pc board ass'y
D	U3	1A616569-1A	NADG-5569-1A, Display circuit pc board ass'y
P/PB		1A616569-1B	NADG-5569-1B, Display circuit pc board ass'y
PA/PT		1A616569-1C	NADG-5569-1C, Display circuit pc board ass'y
D	U4	1A616570-1A	NAAF-5570-1A,Volume and surround selector pc board ass'y
P/PB		1A616570-1B	NAAF-5570-1B,Volume and surround selector pc board ass'y
PA/PT		1A616570-1C	NAAF-5570-1C,Volume and surround selector pc board ass'y
D	U5	1A616571-1A	NAAF-5571-1A,Pre. out/main in pc board ass'y
P/PB		1A616571-1B	NAAF-5571-1B,Pre. out/main in pc board ass'y
PA/PT		1A616571-1C	NAAF-5571-1C,Pre. out/main in pc board ass'y
D	U6	1A616572-1A	NAAF-5572-1A, Front/center power amplifier pc board ass'y
P/PB		1A616572-1B	NAAF-5572-1B, Front/center power amplifier pc board ass'y
PA/PT		1A616572-1C	NAAF-5572-1C, Front/center power amplifier pc board ass'y

MARK	REF. NO.	PART NO.	DESCRIPTION
D	U7	1A616573-1A	NAETC-5573-1A, Pc board for holder
P/PB		1A616573-1B	NAETC-5573-1B, Pc board for holder
PA/PT		1A616573-1C	NAETC-5573-1C, Pc board for holder
D	U8	1A616574-1A	NAAF-5574-1A, Surround power amplifier pc board ass'y
P/PB		1A616574-1B	NAAF-5574-1B, Surround power amplifier pc board ass'y
PA/PT		1A616574-1C	NAAF-5574-1C, Surround power amplifier pc board ass'y
D	U9	1A616575-1A	NAETC-5575-1A, Pc board for holder
P/PB		1A616575-1B	NAETC-5575-1B, Pc board for holder
PA/PT		1A616575-1C	NAETC-5575-1C, Pc board for holder
D	U10	1A616576-1A	NARF-5576-1A, FM/AM tuner circuit pc board ass'y
P/PB		1A616576-1B	NARF-5576-1B, FM/AM tuner circuit pc board ass'y
PA/PT		1A616576-1C	NARF-5576-1C, FM/AM tuner circuit pc board ass'y
D	U11	1A616577-1A	NAPS-5577-1A, Power supply circuit pc board ass'y
P/PB/PT		1A616577-1B	NAPS-5577-1B, Power supply circuit pc board ass'y
PA		1A616577-1C	NAPS-5577-1C, Power supply circuit pc board ass'y
D	U12	1A616578-1A	NAETC-5578-1A, AC outlet terminal pc board ass'y
P/PB/PT		1A616579-1B	NAETC-5579-1B, AC outlet terminal pc board ass'y
D	U13	1A616580-1A	NAETC-5580-1A, Speaker terminal pc board ass'y
P/PB/PT		1A616580-1B	NAETC-5580-1B, Speaker terminal pc board ass'y
PA		1A616580-1C	NAETC-5580-1C, Speaker terminal pc board ass'y
D	U14	1A616581-1A	NAETC-5581-1A, Surround speaker terminal pc board ass'y
P/PB/PT		1A616581-1B	NAETC-5581-1B, Surround speaker terminal pc board ass'y
PA		1A616581-1C	NAETC-5581-1C, Surround speaker terminal pc board ass'y
D	U15	1A616582-1A	NAETC-5582-1A,Headphone terminal pc board ass'y
P/PB/PT		1A616582-1B	NAETC-5582-1B,Headphone terminal pc board ass'y
PA		1A616582-1C	NAETC-5582-1C,Headphone terminal pc board ass'y
D	U16	1A616583-1A	NAETC-5583-1A,Video terminal pc board ass'y
P/PB/PT		1A616583-1B	NAETC-5583-1B,Video terminal pc board ass'y
PA		1A616583-1C	NAETC-5583-1C,Video terminal pc board ass'y
D	U17	1A616584-1A	NAETC-5584-1A,Video S terminal pc board ass'y
P/PB/PT		1A616584-1B	NAETC-5584-1B,Video S terminal pc board ass'y
PA		1A616584-1C	NAETC-5584-1C,Video S terminal pc board ass'y
D	U18	1A616586-1A	NAAF-5586-1A,AC-3 input terminal pc board ass'y
P/PB		1A616586-1B	NAAF-5586-1B,AC-3 input terminal pc board ass'y
PA/PT		1A616586-1C	NAAF-5586-1C,AC-3 input terminal pc board ass'y
D	U19	1A616510-1A	NAETC-5610-1A,Xantech pc board ass'y
P		1A616511-1B	NAETC-5611-1B,MR terminal pc board ass'y
D	U20	1A616585-1A	NAETC-5585-1A,Video-4 terminal pc board ass'y
P/PB/PT		1A616585-1B	NAETC-5585-1B,Video-4 terminal pc board ass'y
PA		1A616585-1C	NAETC-5585-1C,Video-4 terminal pc board ass'y

NOTE: <D> :120V model only
<P> :230V model only
<PA> :Australian model only
<PB> :U.K. model only
<PT> :Taiwanese model only

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

PACKING VIEW

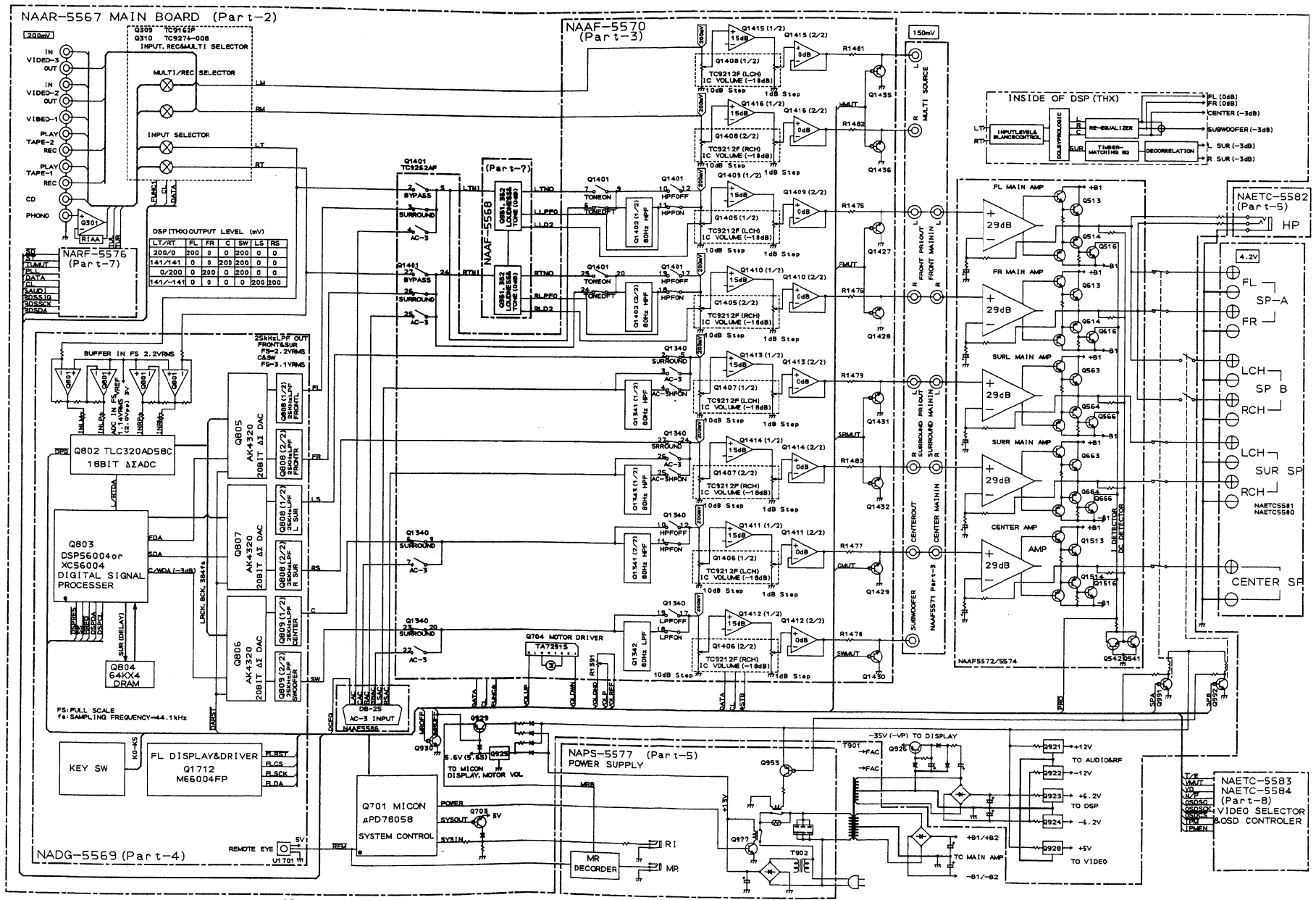


MARK	REF. NO.	PART NO.	DESCRIPTION
	1	29100034A	Styren bag for unit
D/PA/PT	2	29052931	Carton box
P/PB		29052932	Carton box
	3	282302	Staple
	4	29091615B	Pad R
	5	29091614A	Pad L
	6	261504	Adhesive tape
	7	29110071	PP tape
	8	Accessary bag ass'y	
		29100097-1Y	350×250, Styren bag
		29342200	Instruction manual, English
P		29342201	Instructio manual U3 (SDSW)
P		29342202	Instructio manual U3 (GFI)
DC/PT		29342203	Instructio manual U3 (FSC)
		24140307	RC-307M, Remote control transmitter
		3010124	UM-4, Four batteries
		232140	NMA-3057, AM loop antenna
D		292111	FM antenna
P		292112	FM antenna
		2010200	Cord RI
DC		29360778	Label Flash
DN		29365019B	Warranty card
DN		29358002K	Service station list
DN		29361913	Label UPC

NOTE: <D> :120V model only
<P> :230V model only
<DN> :U.S.A. model only
<DC> :Canadian model only
<PA> :Australian model only
<PB> :U.K. model only
<PT> :Taiwanese model only

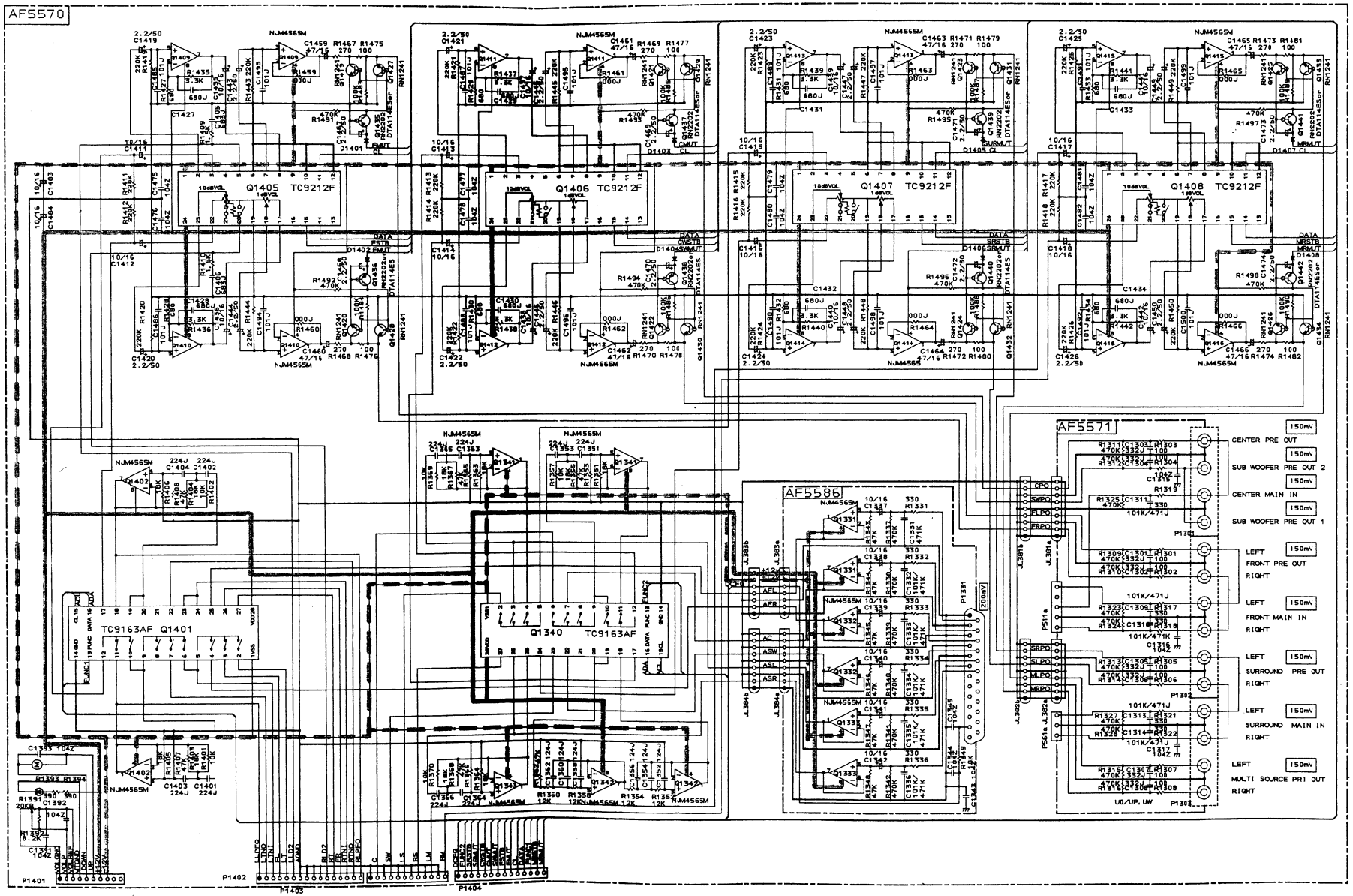
BLOCK DIAGRAM

AMPLIFIER SECTION



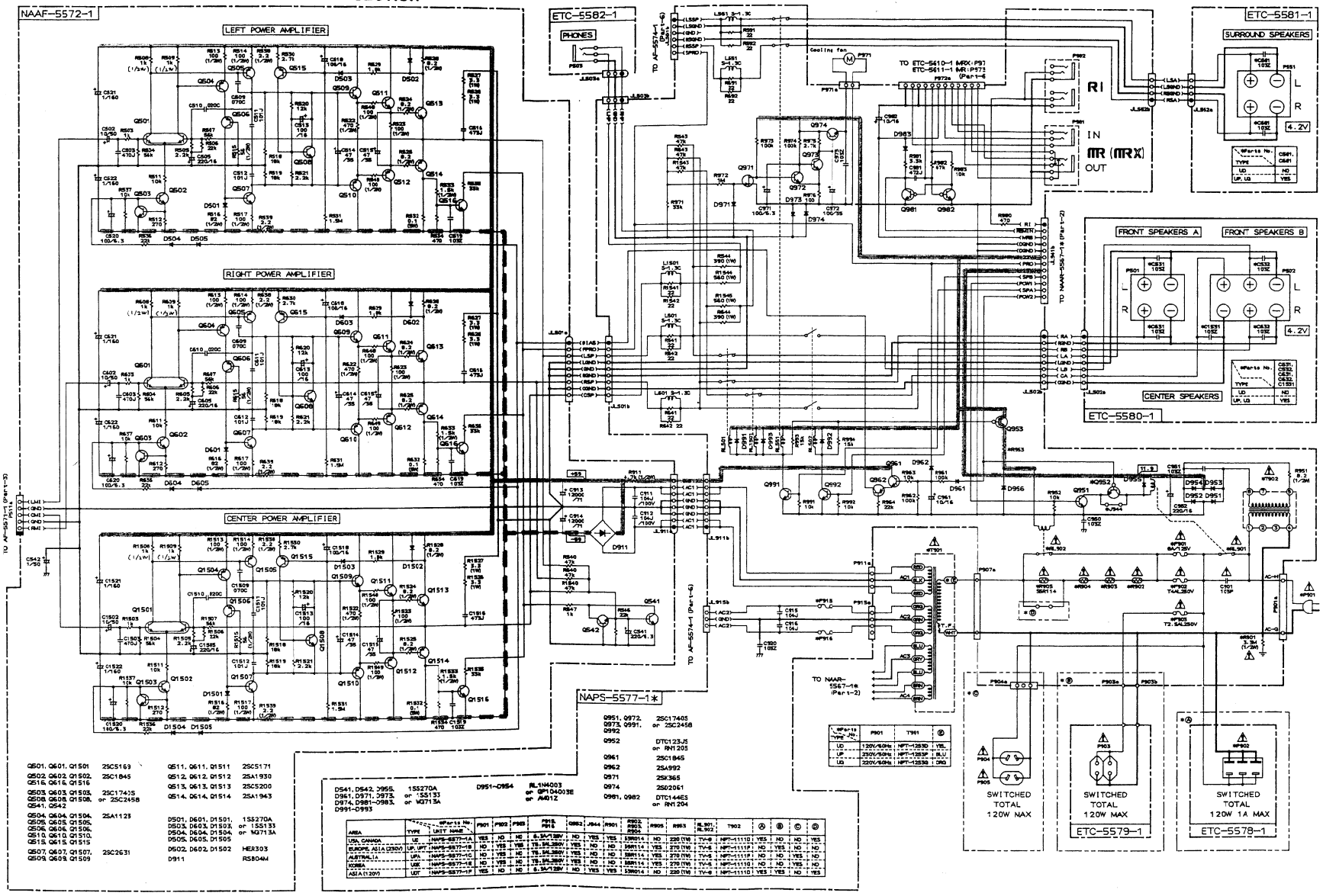
SCHEMATIC DIAGRAM

VOLUME AND SURROUND SELECTOR SECTION



SCHEMATIC DIAGRAM

FRONT / CENTER AMP. AND POWER SUPPLY SECTION

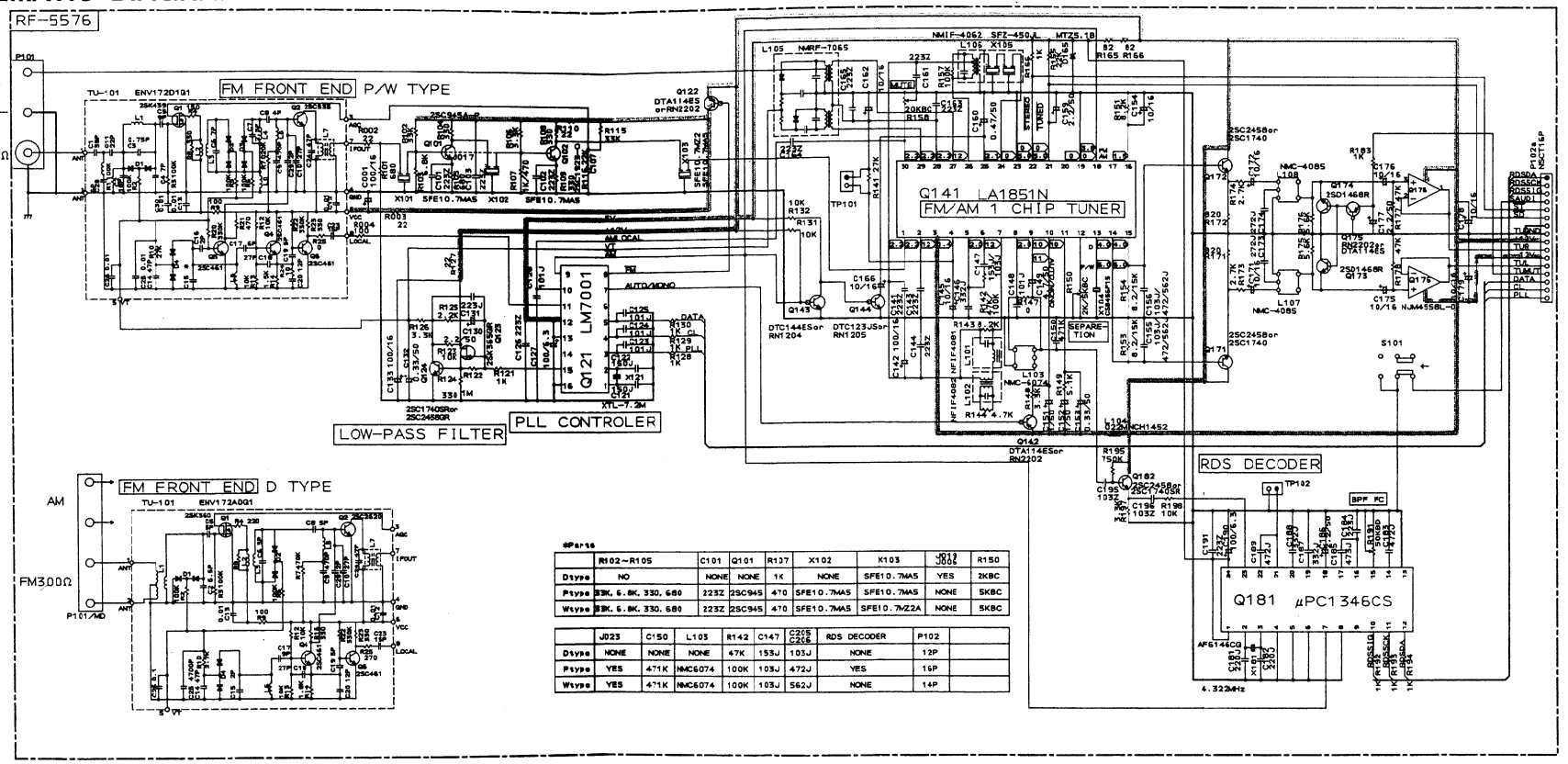


AREA	TYPE	UNIT NAME	P501	P502	P503	R515, R615, R1515	Q952	J944	R901	R902, R903, R904	R905	R963	SL901, SL902	T902	Ⓐ	Ⓑ	Ⓒ	Ⓓ
USA, CANADA	UC	NAPS-5577-1A	YES	NO	NO	6.8Ω/1.5W	NO	YES	YES	5R6014	NO	220 (1W)	TV-6	NPT-11110	YES	NO	NO	YES
EUROPE, ASIA (220V)	UF	NAPS-5577-1B	NO	YES	YES	TS 56Ω/2W	YES	NO	NO	5R6114	YES	270 (1W)	TV-5	NPT-11111F	NO	YES	NO	NO
AUSTRALIA	UFA	NAPS-5577-1C	NO	YES	NO	TS 56Ω/2W	YES	NO	NO	5R6114	YES	270 (1W)	TV-5	NPT-11111F	NO	YES	NO	NO
KOREA	UK	NAPS-5577-1E	NO	YES	NO	TS 56Ω/2W	YES	NO	NO	5R6114	YES	270 (1W)	TV-5	NPT-11110	NO	YES	NO	NO
ASIA (120V)	UDT	NAPS-5577-1F	YES	NO	NO	6.8Ω/1.5W	NO	YES	YES	5R6014	NO	220 (1W)	TV-6	NPT-11110	YES	YES	NO	YES

*Parts No. TYPE	P901	T901	Ⓒ
UD	120V/60Hz	NPT-12830	YEL
UF	230V/50Hz	NPT-12831F	BLU
UD	220V/60Hz	NPT-12834	GRY

*Parts No. TYPE	C831, C832, C833, C1531
UD	NO
UF, UG	YES

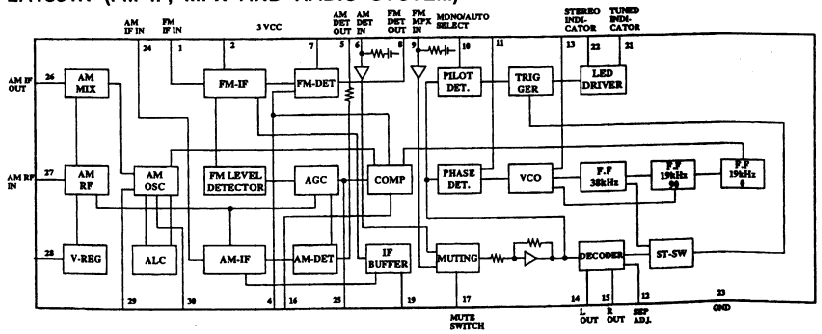
SCHEMATIC DIAGRAM TUNER CIRCUIT SECTION



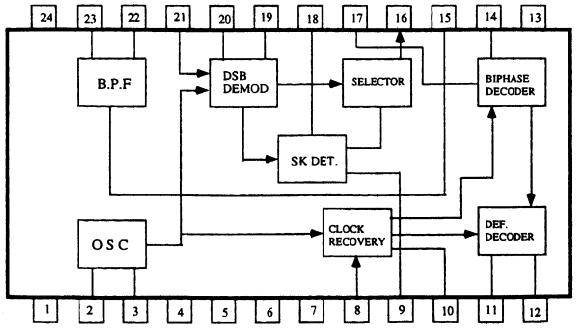
*Parts	R102~R105	C101	Q101	R137	X102	X103	J012 J013	R150
Dstype	NO	NONE	NONE	1K	NONE	SFE10.7MA5	YES	2KBC
Pstype	33K, 6.8K, 330, 680	223Z	2SC945	470	SFE10.7MA5	SFE10.7MA5	NONE	5KBC
Wstype	33K, 6.8K, 330, 680	223Z	2SC945	470	SFE10.7MA5	SFE10.7MZ2A	NONE	5KBC

	J023	C150	L103	R142	C147	C205 C206	RDS DECODER	P102	
Dstype	NONE	NONE	NONE	47K	153J	103J	NONE	12P	
Pstype	YES	471K	NMC6074	100K	103J	472J	YES	16P	
Wstype	YES	471K	NMC6074	100K	103J	562J	NONE	14P	

LA1851N (FM IF, MPX AND RADIO SYSTEM)

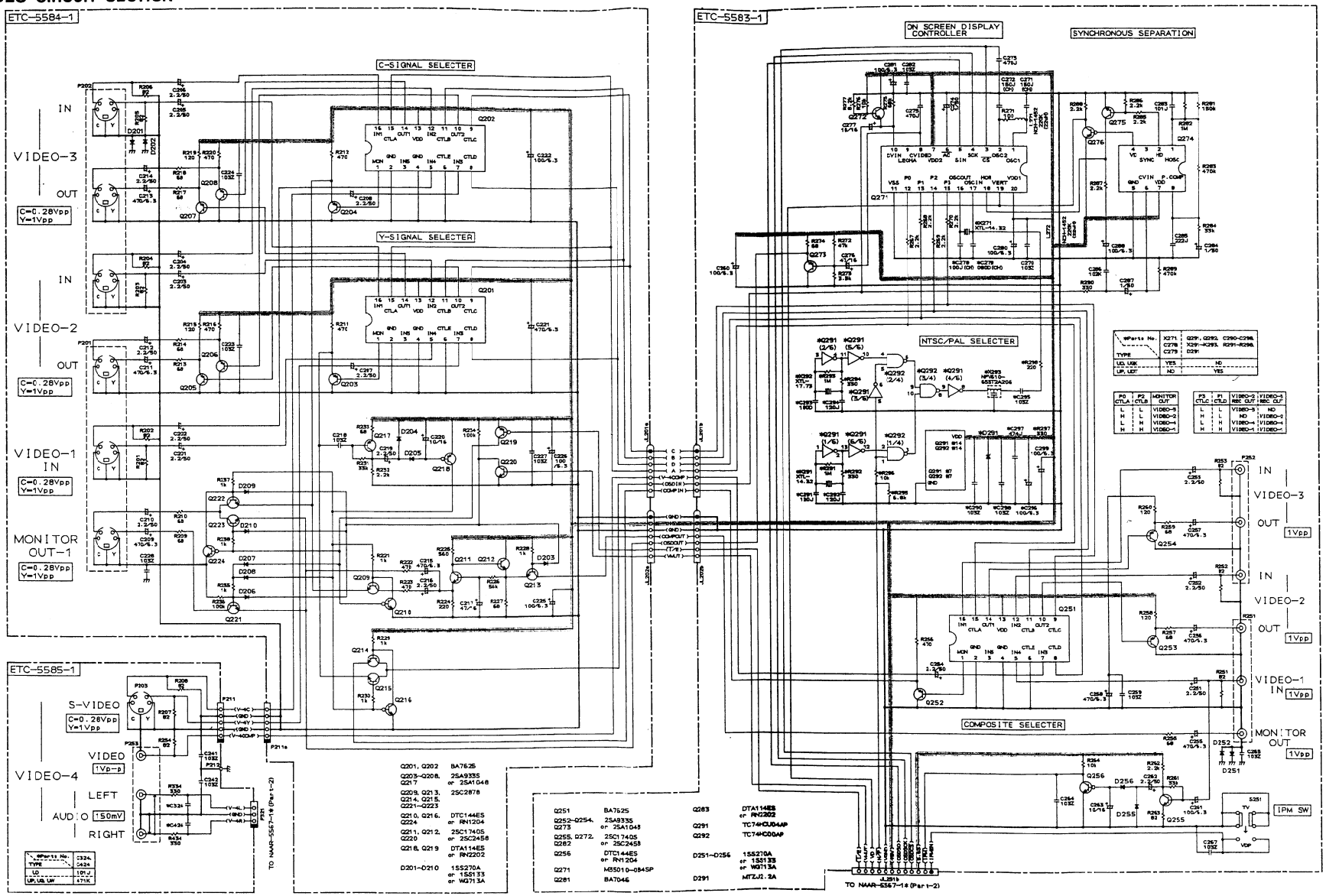


μ PC1346CS (RDS DECODER)



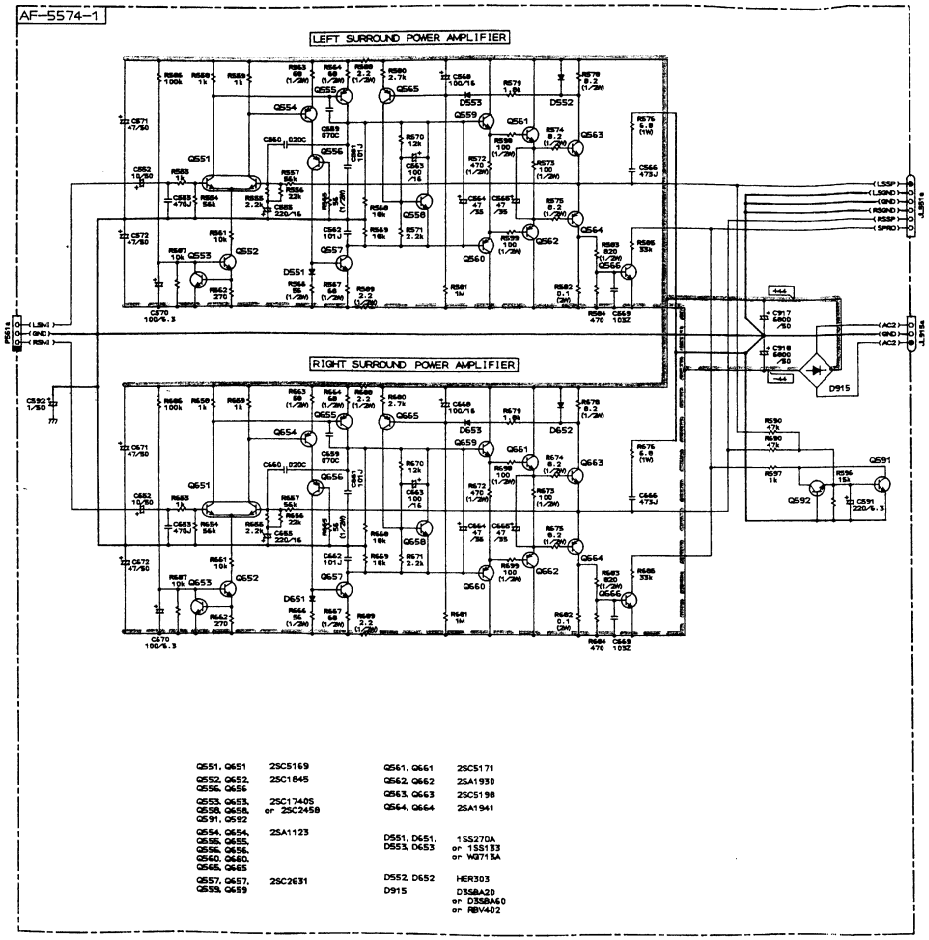
SCHEMATIC DIAGRAM

VIDEO CIRCUIT SECTION

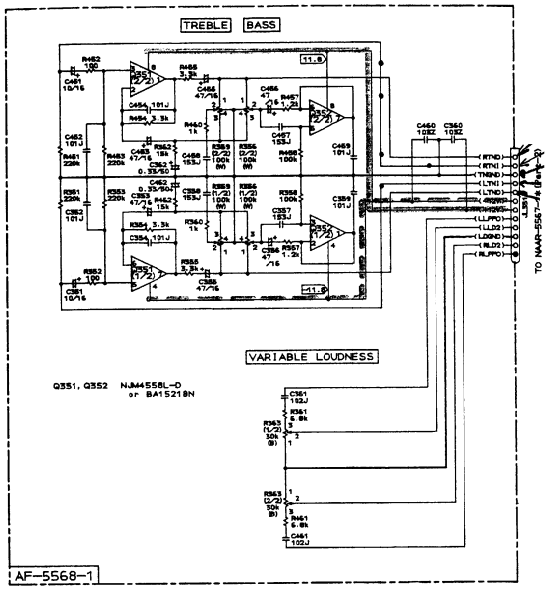


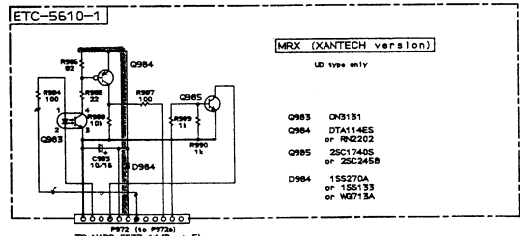
SCHEMATIC DIAGRAM

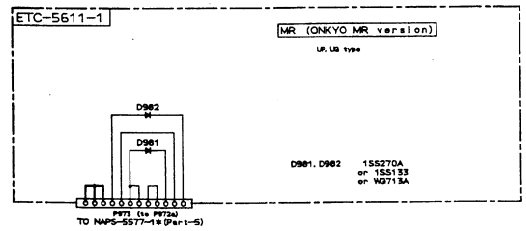
TONE AND SURROUND AMP. SECTION



Q551, Q651	2SC5169	Q561, Q661	2SC5171
Q552, Q652, Q555, Q655	2SC1845	Q562, Q662	2SA1930
		Q563, Q663	2SC5198
Q553, Q653, Q558, Q658, Q591, Q592	2SC1740S or 2SC2458	Q564, Q664	2SA1941
Q554, Q654, Q556, Q656, Q560, Q660, Q565, Q665	2SA1123	D551, D651, D553, D653	1SS270A or 1SS133 or W3713A
Q557, Q657, Q559, Q659	2SC2631	D552, D652	HER303
		D915	DSSBA20 or DSSBA60 or RBV402

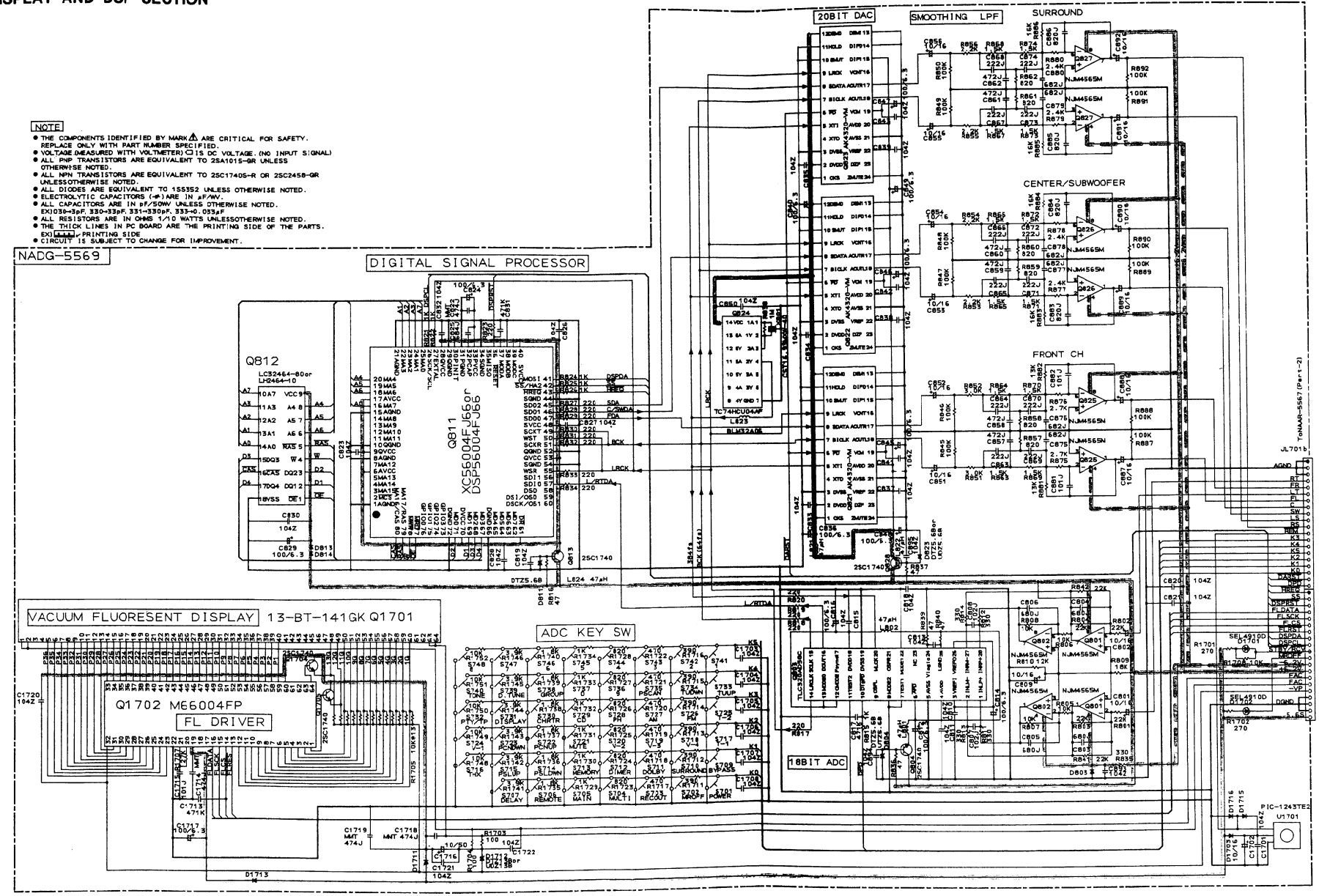






SCHEMATIC DIAGRAM

DISPLAY AND DSP SECTION


NOTE
THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR SAFETY. REPLACE ONLY WITH PART NUMBER SPECIFIED.
VOLTAGE (MEASURED WITH VOLTMETER) □ IS DC VOLTAGE. (NO INPUT SIGNAL)
ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1015-GR UNLESS OTHERWISE NOTED.
ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1740S-R OR 2SC2458-GR UNLESSOTHERWISE NOTED.
ALL DIODES ARE EQUIVALENT TO 1SS352 UNLESS OTHERWISE NOTED.
ELECTROLYTIC CAPACITORS (#) ARE IN μF/WV.
ALL CAPACITORS ARE IN pF/50WV UNLESS OTHERWISE NOTED.
EX) 030→3pF, 330→33pF, 331→330pF, 333→0.033μF
ALL RESISTORS ARE IN OHMS 1/10 WATTS UNLESSOTHERWISE NOTED.
THE THICK LINES IN PC BOARD ARE THE PRINTING SIDE OF THE PARTS.
EX) ▬▬ : PRINTING SIDE
CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.
NADG-5569
DIGITAL SIGNAL PROCESSOR
Q812
LC32464-80or LH2464-10
Q811
XC5500 4FJ66or DSP56004FJ66
20BIT DAC
SMOOTHING LPF
SURROUND
CENTER/SUBWOOFER
FRONT CH
AK4320-VM
NJM4565M
TC74HCU04AF
2SC1740
DTZ5.68
L824 47μH
VACUUM FLUORESENT DISPLAY 13-BT-141GK Q1701
Q1702 M66004FP
FL DRIVER
ADC KEY SW
18BIT ADC
PIC-1243TE2
U1701
JL701
TONAAR-5567 (Part-2)

ADJUSTMENT PROCEDURES

Preparation

1. Input

FM mono: 1kHz, 75kHz devi., 60dB/μ V

FM stereo: 1kHz, 67.5kHz devi., 60dB/μ V

Pilot signal 19kHz 7.5kHz devi.

AM: 400Hz, 30% mod.

2. Outputs

Connect the non-inductive type resistor of 8 ohms to the all speaker terminals unless otherwise noted.

1.FM ADJUSTMENT

Item	Step	Connection of instrument	FM SG output	Stereo modulator output	Tuning frequency	Output indicator	Adjustment point	Adjust for	Remarks
FM IF/RF	1	Fig.1	99.0MHz 1kHz 75kHz devi. 65dBf(60dB)	—	99.0MHz	DC voltmeter	L101	0±20mV	FM MUTE/MODE switch:OFF/MONO Repeat the steps 1 and 3 until no further adjustment is necessary.
	2					AC voltmeter	IFT on the front end	Maximum	
	3					Distortion analyzer	L102	Minimum	
Stereo Distortion		Fig.2	99.0MHz Ext. mod.65dBf(60dB)	Channel L or R 1kHz	99.0MHz	Distortion analyzer	IFT on the front end	Minimum	Don't turn more than ±180°
Stereo Separation	1	Fig.2	99.0MHz Ext. mod. 65dBf(60dB)	Channel L 1kHz	99.0MHz	Channel R AC voltmeter	R150	Minimum	Maximum and same separation
	2			Channel R 1kHz		Channel L AC voltmeter		Minimum	
Muting Level		Fig.2	99.0MHz 19.2dBf(14dB)	—	99.0MHz	Oscilloscope	R158	Signal output	
RDS		Fig.3	99.0MHz Ext. mod.60dB	RDS data or 57kHz 3% devi.	99.0MHz	Oscilloscope	R191	Maximum	TX-SV525R only

2.AM ADJUSTMENT

120V model

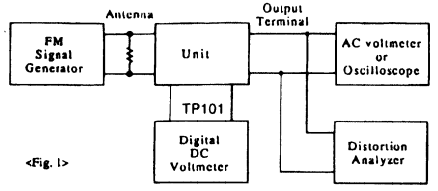
Step	AM SG output	Tuning Frequency	Output Indicator	Adjustment point	Adjust for
1		530kHz	Digital DC voltmeter	OSC coil on RF block L151	1.4±0.2V
2	600kHz 400Hz 30% mod. 60dB/m	600kHz	AC voltmeter	RF coil on RF block L151	Maximum
3	990kHz 400Hz 30% mod. 60dB/m	990kHz	AC voltmeter	L152	Maximum

Reference Specification
FM tuned voltage:87.5MHz~108.0MHz
More than 1.3V ~Less than 10V
AM tuned voltage:530kHz~1710kHz
1.4±0.2V~Less than 9.0V

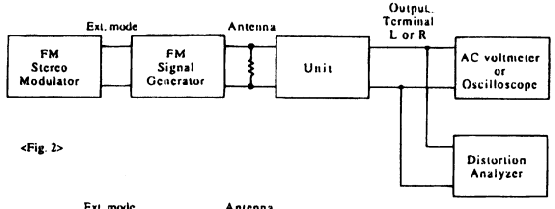
230V models

Step	AM SG output	Tuning Frequency	Output Indicator	Adjustment point	Adjust for
1		522kHz or 531kHz	Digital DC voltmeter	OSC coil on RF block L151	1.3±0.1V
2	603kHz 400Hz 30% mod. 60dB/m	603kHz	AC voltmeter	RF coil on RF block L151	Maximum
3	999kHz 400Hz 30% mod. 60dB/m	999kHz	AC voltmeter	L152	Maximum

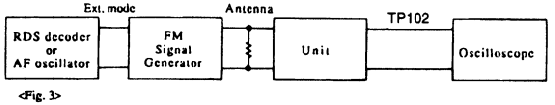
Reference Specification
FM tuned voltage:87.5MHz~108.0MHz
More than 1.3V ~Less than 10V
AM tuned voltage:522kHz~1611kHz
1.3±0.2V~Less than 9.0V



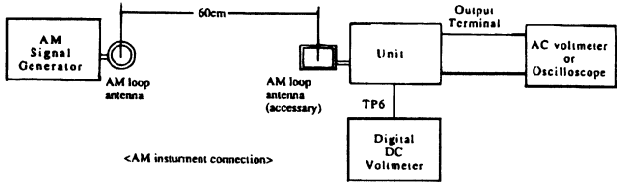
<Fig. 1>



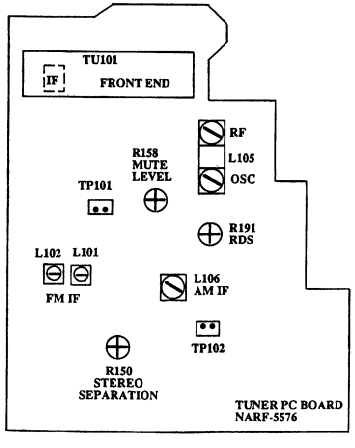
<Fig. 2>



<Fig. 3>



<AM instrument connection>



Adjustment point